DOCUMENT RESUME

ED 051 416	VT 013 332
AUTHOR	Chorness, Maury H.; And Others
TITLE	The Feasibility of Establishing Highway Safety Manpower Development and Research Centers at University-Level Institutions. Final Report, Volume II: Appendixes.
INSTITUTION	Stanford Research Inst., Menlo Park, Calif.
SPONS AGENCY	Department of Transportation, Washington, D.C. National Highway Safety Bureau.
REPORT NO	SRI-Proj-7386
PUB DATE	Jul 69
NOTE	153p.
EDRS PRICE	EDRS Price MF-$0.65 HC-$6.58
DESCRIPTORS	Educational Development, Educational Needs, *Feasibility Studies, Job Skills, *Manpower Development, Program Administration, Program Development, *Research and Development Centers, *Safety, Site Analysis, Site Selection, Tables (Data), *Transportation
IDENTIFIERS	*Highway Safety

ABSTRACT

This document, the second of a 2-volume report, contains appendixes of data tables and other study materials relating to the feasibility of establishing Highway Safety Manpower Development and Research Centers. Appendixes are: (1) Skills and Disciplines Required for Highway Safety Education and Training, (2) Development of Program Strategy for the Placement of Centers, (3) Criteria for Selection of Candidate Universities, (4) Identification of Candidate Universities, and (5) Visits to Candidate Universities. Volume I is available as VT 013 331 in this issue. (SB)

ED051416

Final Report

THE FEASIBILITY OF ESTABLISHING HIGHWAY SAFETY MANPOWER DEVELOPMENT AND RESEARCH CENTERS AT UNIVERSITY-LEVEL INSTITUTIONS

Volume II: Appendixes

Prepared for:

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VT013332

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Final Report

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July 1969

THE FEASIBILITY OF ESTABLISHING HIGHWAY SAFETY MANPOWER DEVELOPMENT AND RESEARCH CENTERS AT UNIVERSITY-LEVEL INSTITUTIONS

Volume II: Appendixes

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SRI Project 7386

Prepared for the U.S. Department of Transportation, National Highway Safety Bureau, under Contract FH-11-6917.

The opinions, findings, and conclusions expressed in this publication are those of the authors and not necessarily those of the National Highway Safety Bureau.

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Copy No. 66

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Appendix 1

SKILLS AND DISCIPLINES REQUIRED FOR HIGHWAY SAFETY EDUCATION AND TRAINING

NOTES ON
TRAINING NEEDS FOR HIGHWAY SAFETY SPECIALISTS
DERIVATION OF CHART NUMBERS

Generalized Job Title--from BA&H report, Appendix B.

Column 1: Entering Education--from job description, BA&H report, Appendix B.

Column 2: 1973 Estimated Manpower Requirements--from manpower requirements, Alternate No. 2, BA&H report, Appendix E.

Safety Specialist Trainees

Column 3: Hours of Entry Training per Individual*--from job descriptions, BA&H report, Appendix B.

Column 4: Total hours of Entry Training--(Column 2 x Column 3).

Column 5: Hours of Refresher Training per Individual--from job descriptions, BA&H report, Appendix B.

Column 6: Hours of Refresher Training per Individual, 1969-1973--(5 x Column 5**).

Column 7: Total Hours of Refresher Training, 1969-1973--(Column 2 x Column 6).

Column 8: Total Training Hours, 1969-1973--(Column 4 + Column 7).

NOTE: The 1978 figures were basically determined by the same methods as the 1973 data. A ten year, rather than a five year base was used and where necessary, mathematical projections were made to fulfill the requirements for 1978.

* When two figures are shown in a column for one job title, the upper figure indicates the number of hours of training and the lower figure indicates the number of those hours that are devoted to laboratory type training.

** Hours of refresher training for five or ten years calculated on the basis of total annual hours.

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Column 9: Place of Training (for those in Generalized Job Title positions) and Number of Field Trainers--if "Center" is indicated, training is given at a university or HSMDR Center. If "Field" is indicated, training is given outside of a university or HSMDR Center by a teacher who has been trained at a university or HSMDR Center. If the number of individuals occupying a job position is less than 100, as indicated in Column 2, the training will be given at a university or HSMDR Center. Otherwise, the training will be given outside of a university or HSMDR Center by a teacher who has been trained at a university or HSMDR Center.

In making the calculations for field trainers, it is assumed that courses will be "canned" by a university or HSMDR Center. Field trainers, who have been trained at a university or HSMDR Center can teach, on the average, 20 hours per week and 50 weeks per year. It is further assumed that an average class of 20 will be involved in classroom type teaching and an average class of 4 will be involved in laboratory type teaching.

Field Trainers

Column 10: Estimated Number of Field Trainers--It is estimated that field trainers should have double the training time given to those those they teach. Field trainers will be trained at a university or HSMDR Center, (2 x Column 3).

Column 11: Total Hours Entry Training--(Column 9 x Column 10).

Column 12: Hours of Refresher Training per Individual--Here, again, it is estimated that field trainers should have about double the training time given to those they teach. This refresher training for field trainers will be done at a university or HSMDR Center , (2 x Column 5).

Column 13: Hours of Refresher Training per Individual, 1969-1973--(5 x Column 12).

Column 14: Total Hours of Refresher Training, 1969-1973--(Column 9 x Column 13).

Column 15: Total Training Hours, 1969-1973--(Column 11 + Column 14).

Column 16: Place of Training (for Field Trainers)--All "Teachers of Teachers" are trained at a university or HSMDR Center.

Column 17-23: Center Professorial Requirements, Fulltime Man Years per Year (faculty requirements allocated to academic disciplines at university or HSMDR Center to train highway safety personnel)--A large matrix type chart was constructed with BA&H, Appendix B, generalized Job Titles as the ordinate and Special Training Courses Description as the abscissa, showing the number of special training hours as specified by BA&H. Where BA&H did not break down the training hours to specific courses, an allocation was estimated. An analysis of the content of the courses indicated that they could be synthesized into the following discipline categories:

A. Law
B. Medicine
C. Business or Public Administration
D. Education
E. Police Sciences
F. Engineering
G. Psychology

Column 24: Total number of Center Professors--It is assumed that university or HMSDR Center professors must prepare their courses and keep them up-to-date and can teach on the average of 10 hours per week, 40 weeks per year. It it further assumed that there will be an average class of 20 in classroom type teaching and an average of 4 in laboratory type teaching.

Single Highway Safety Manpower

PROFESSORIAL REQUIREMENTS FOR TRAINING OF S

(When Estimated Manpower Requirements exceed 1

	Generalized Job Title	Entering Education*	1973 Estimated Manpower Requirements	Safety Specialist Trainees				
				Hrs. Entry Training Per Individual	Total Hrs. Entry Training (thousands)	Hrs. Refresher Training Per Individual	Hrs. Refresher Training Per Individual 1969-1973	Total Hrs. Refresher Training 1969-1973 (thousands
1.	Governor's Highway Safety Program Director	BA	50	40	2.0	24 Tri	40	2
2.	Highway Safety Program Analyst	BA	99	160	15.8	40 Tri	67	7
3.	Highway Safety Public Information Officer	BA	27	40	1.1	40 Tri	67	2
4.	Motor Vehicle Inspector (incl. Motorcycles)	HS	12,445	40 6	497.8 74.7	16 2 Yr	80 10	996 125
5.	Motor Vehicle Station Inspector	HS	1,141	80 8	91.3 9.1	24 4 Yr	120 20	137 23
6.	Driver Training Program Specialist	MS	200	40 4	8.0 .80	40 4 Tri	67 7	13 1
7.	Driver Education Supervisor	MS	3,063	40	122.5	40 Tri	67	205
8.	Driver Education Teacher	BA	11,888	300 24	3,566.4 285.3	24 4 Yr	120 20	1,427 238
9.	Driver Retraining Instructor	BA	2,234	380 32	848.9 71.5	24 4 Yr	120 20	268 45
10.	Driver License Examiner (incl. Motorcycle)	HS	3,881	80 8	310.5 31.1	24 4 Yr	120 20	466 78
11.	Driver License Hearing Officer	HS	430	80	34.4	24 Yr	120	52
12.	Codes and Laws Program Specialist	Law Deg	50	40	2.0	---	---	---
13.	Traffic Court Judge	Law Deg	1,449	40	58.0	16 Yr	80	116
14.	Traffic Court Program Specialist	Law Deg	50	80	4.0	32 Tri	53	3
15.	Alcohol Technical Specialist	BA	202	80 12	16.2 2.4	24 4 Yr	120 20	24 4
16.	Breath Examiner Specialist	HS	2,152	40 8	86.1 17.2	16 4 Yr	80 20	172 43
17.	Accident Site Investigator	MS	1,530	120	183.6	40 Tri	67	103
18.	Accident Site Investigator Aide	HS	1,074	120	128.9	24 Yr	120	129
19.	Traffic Record Program Analyst	BA	100	80	8.0	40 Tri	67	7
20.	Traffic Records Systems Analyst	BA	50	40	2.0	40 Tri	67	3
21.	Emergency Medical Services Program Specialist	MS	50	80	4.0	40 Tri	67	3
22.	Emergency Medical Services Field Representative	BA	220	80	17.6	24 Yr	120	26
23.	Highway Engineer--Safety	BA	1,112	40	44.5	24 Yr	120	133
24.	Engineering Aide--Safety	HS	770	120	92.4	24 Yr	120	92
25.	Highway Safety Site Officer	HS	557	40	22.3	24 Yr	120	67
26.	Traffic Engineer	MS	820	40 8	32.8 6.6	24 4 Yr	120 20	98 16
27.	Engineering Aide--Traffic	HS	505	120 16	60.6 8.1	24 4 Yr	120 20	61 10
28.	Traffic Control Service Technician	HS	516	40 20	20.6 10.3	24 8 Yr	120 40	62 21
29.	Pedestrian Safety Program Specialist	MS	50	40	2.0	40 Tri	67	3
30.	Police Traffic Services Program Specialist	Jr. Col.	100	80	8.0	40 Tri	67	7
31.	Police Traffic Services Officer	Jr. Col.	1,211	80	96.9	20 Yr	100	121
32.	Police Traffic Services Patrolman	HS	39,274	140 20	5,498.4 785.5	20 4 Yr	100 20	3,927 786
33.	State Wrecker Operator	HS	3,981	40 4	159.2 15.9	16 2 Yr	80 10	319 40
34.	State Wrecker Field Representative	BA	55	80 8	4.4 .4	24 4 Yr	120 20	7 1
35.	School Bus Program Specialist	BA	50	80	4.0	40 Tri	67	3
36.	School Bus Driver Training Officer	BA	439	40 8	17.6 3.5	40 4 Tri	67 20	29 9

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fety Manpower Development and Research Center

Five Year Program

Appendix 1-1

TRAINING OF STATE GOVERNMENT SAFETY SPECIALIST TRAINEES

ments exceed 100, operating personnel are trained in field)

st Trainees				Center Professorial Requirements--Full-time Man Years/Year							
r g al 3	Total Hrs. Refresher Training 1969-1973 (thousands)	TOTAL Training Hrs. 1969-1973 (thousands)	Place of Training & No. of Field Trainers	Law	Medicine	Public or Bus. Adm.	Education	Police Science	Engr.	Psych.	Total No. of Center Professors
	2	4	Center			.100					.10
	7	23	Center			.392		.084	.084		.56
	2	3	Center			.070					.07
	996 125	1,493 199	Field (23)								
	137 23	228 32	Field (4)								
	13 1	21 2	Field (1)								
	205	328	Field (4)								
	1,427 238	4,993 523	Field (71)								
	268 45	1,117 116	Field (16)								
	466 78	776 109	Field (13)								
	52	86	Field (1)								
	---	2	Center	.037		.013					.05
	116	174	Field (2)								
	3	7	Center	.075		.095					.17
	24 4	40 6	Field (1)								
	172 43	258 60	Field (5)								
	103	286	Field (3)								
	129	258	Field (3)								
	7	15	Center			.055	.074		.167	.074	.37
	3	5	Center			.130					.13
	3	7	Center		.126	.054					.18
	26	44	Field (1)								
	133	178	Field (2)								
	92	185	Field (2)								
	67	89	Field (1)								
	98 16	131 23	Field (3)								
	61 10	121 18	Field (2)								
	62 21	83 31	Field (2)								
	3	5	Center			.033	.097				.13
	7	15	Center			.044	.166	.160			.37
	121	218	Field (3)								
	3,927 786	9,426 1,571	Field (158)								
	319 40	478 56	Field (8)								
	7 1	11 2	Center		.073	.167	.095		.095		.43
	3	7	Center			.090	.090				.18
	29 9	47 12	Field (1)								

Generalized Job Title	Entering Education*	1973 Estimated Number of Field Trainers	Field Trainers Hrs. Entry Training Per Individual	Total Hrs. Entry Training (thousands)	Hrs. Refresher Training Per Individual	Hrs. Refresher Training Per Individual 1969-1973	Total Hrs. Refresher Training 1969-197
4. Motor Vehicle Inspector (incl. Motorcycles)	HS	23	80/12	1.84/.28	32/4 Yr	160/20	3.68/.46
5. Motor Vehicle Station Inspector	HS	4	160/16	.64/.06	48/8 Yr	240/40	.96/.16
6. Driver Training Program Specialist	MS	1	80/8	.08/.01	80/8 Tri	134/14	.13/.01
7. Driver Education Supervisor	MS	4	80	.32	80 Tri	134	.54
8. Driver Education Teacher	BA	71	600/48	42.60/3.41	48/8 Yr	240/40	17.04/2.84
9. Driver Retraining Instructor	BA	16	760/64	12.16/1.02	48/8 Yr	240/40	3.84/.64
10. Driver License Examiner (incl. Motorcycles)	HS	13	160/16	13.31/.21	48/8 Yr	240/40	3.12/.52
11. Driver License Hearing Officer	HS	1	160	.16	48 Yr	240	.24
13. Traffic Court Judge	Law Deg	2	80	.16	32 Yr	160	.32
15. Alcohol Technical Specialist	BA	1	160/24	.16/.02	48/8 Yr	240/40	.24/.04
16. Breath Examiner Specialist	HS	5	80/16	.40/.08	32/8 Yr	160/40	.80/.20
17. Accident Site Investigator	MS	3	240	.72	80 Tri	134	.40
18. Accident Site Investigator Aide	HS	3	240	.72	48 Yr	240	.72
22. Emergency Medical Services Field Representative	BA	1	160	.16	48 Yr	240	.24
23. Highway Engineer--Safety	BA	2	80	.16	48 Yr	240	.48
24. Engineering Aide--Safety	HS	2	240	.48	48 Yr	240	.48
25. Highway Safety Site Officer	HS	1	80	.08	48 Yr	240	.24
26. Traffic Engineer	MS	3	80/16	.24/.05	48/8 Yr	240/40	.72/.12
27. Engineering Aide--Traffic	HS	2	240/32	.48/.06	48/8 Yr	240/40	.48/.08
28. Traffic Control Services Technician	HS	2	80/40	.16/.08	48/16 Yr	240/80	.48/.08
31. Police Traffic Services Officer	Jr. Col.	3	160	.48	40 Yr	200	.60
32. Police Traffic Services Patrolman	HS	158	280/40	44.24/6.32	40/8 Yr	200/40	31.60/6.32
33. State Wrecker Operator	HS	8	80/8	.64/.06	32/4 Yr	160/20	1.28/.16
36. School Bus Driver Training Officer	BA	1	80/16	.08/.02	80/8 Tri	134/40	.13/.04

Total Profes

Source for Entering Education, Estimated Manpower Requirements, Hours of Entry Training and Hours of Refresher Training: Booz, Allen & Hamilton's report to NHSB, Safety Specialist Manpower, Manpower Requirements, Vol. I, Appendix B, August 15, 1968.

* HS = High School, BA = BA or BS Degree, MS = MS or MA Degree

Note: Where the number of hours in training are shown as two figures (example - 50/10), the first figure represents the total number of training hours and the second represents the portion of those hours devoted to laboratory training.

Substitute 1 - Prof. Requ
Motor Vehi

Substitute 2 - Prof. Requ
Driver Tra
8) and Pol
31, and 32
Training (
Motor Vehi

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Total Hrs. Refresher Training 1969-1973 (thousands)	TOTAL Training Hrs. 1969-1973 (thousands)	Place of Training	Center Professorial Requirements--Fulltime Man Years/Years							
			Law	Medicine	Public or Bus. Adm.	Education	Police Science	Engr.	Psych.	Total No. of Center Professors
3.68 .46	5.52 .74	Center						.210		.21
.96 .16	1.60 .22	Center			.009	.015		.036		.06
.13 .01	.21 .02	Center			.003	.007				.01
.54	.86	Center			.006	.014				.02
17.04 2.84	59.64 6.25	Center				1.484			.636	2.12
3.84 .64	16.00 1.66	Center				.285		.142	.143	.57
3.12 .52	16.43 .73	Center			.072				.408	.48
.24	.40	Center	.004			.003			.003	.01
.32	.48	Center	.007		.003					.01
.24 .04	.40 .06	Center		.010	.004		.006			.02
.80 .20	1.20 .28	Center	.015		.030		.015			.06
.40	1.12	Center			.002		.007	.021		.03
.72	1.44	Center			.010		.004	.026		.04
.24	.40	Center		.007	.003					.01
.48	.64	Center			.005			.015		.02
.48	.96	Center			.007			.013		.02
.24	.32	Center			.003			.007		.01
.72 .12	.96 .17	Center			.010			.030		.04
.48 .08	.96 .14	Center			.003			.037		.04
.48 .08	.64 .16	Center			.007			.023		.03
.60	1.08	Center			.019		.011			.03
31.60 6.32	75.84 12.64	Center	.442	.221		1.138	1.359			3.16
1.28 .16	1.92 .22	Center		.035	.023	.012				.07
.13 .04	.21 .06	Center				.007			.003	.01
Total Professorial Requirements:			.580	.472	1.462	3.487	1.646	.906	1.267	9.82
1 - Prof. Requirements without Motor Vehicle Inspector (No. 4):			.580	.472	1.462	3.487	1.646	.696	1.267	9.61
2 - Prof. Requirements without Driver Training (Nos. 6, 7, and 8) and Police Training (Nos. 30, 31, and 32) and School Bus Training (Nos. 35 and 36) and Motor Vehicle Inspector (No. 4):			.138	.251	1.300	.581	.116	.696	.628	3.71

Single Highway Safety Manpower

PROFESSORIAL REQUIREMENTS FOR TRAINING OF

(When Estimated Manpower Requirements Exceed

	Generalized Job Title	Entering Education*	1973 Estimated Manpower Requirements	Safety Specialist Trainees				
				Hrs. Entry Training Per Individual	Total Hrs. Entry Training (thousands)	Hrs. Refresher Training Per Individual	Hrs. Refresher Training Per Individual 1969-1973	Total Hrs. Refreshe Trainin 1969-197 (thousand
1.	Governor's Highway Safety Program Director	BA	50	40	2.0	24 Tri	40	2
2.	Highway Safety Program Analyst	BA	99	160	15.8	40 Tri	67	7
3.	Highway Safety Public Information Officer	BA	27	40	1.1	40 Tri	67	2
4.	Motor Vehicle Inspector (incl. Motorcycles)	HS	12,445	40 6	497.8 74.7	16 2 Yr	80 10	996 125
5.	Motor Vehicle Station Inspector	HS	1,141	80 8	91.3 9.1	24 4 Yr	120 20	137 23
6.	Driver Training Program Specialist	MS	200	40 4	8.0 .8	40 4 Tri	67 7	13 1
7.	Driver Education Supervisor	MS	3,063	40	122.5	40 Tri	67	205
8.	Driver Education Teacher	BA	11,888	300 24	3,566.4 285.3	24 4 Yr	120 20	1,427 238
9.	Driver Retraining Instructor	BA	2,234	380 32	848.9 71.5	24 4 Yr	120 20	268 45
10.	Driver License Examiner (incl. Motorcycles)	HS	3,881	80 8	310.5 31.1	24 4 Yr	120 20	466 7[illegible]
11.	Driver License Hearing Officer	HS	430	80	34.4	24 Yr	120	52
12.	Codes and Laws Program Specialist	Law Deg	50	40	2.0	—	—	—
13.	Traffic Court Judge	Law Deg	1,449	40	58.0	16 Yr	80	116
14.	Traffic Court Program Specialist	Law Deg	50	80	4.0	32 Tri	53	3
15.	Alcohol Technical Specialist	BA	202	80 12	16.2 2.4	24 4 Yr	120 20	24 4
16.	Breath Examiner Specialist	HS	2,152	40 8	86.1 17.2	16 4 Yr	80 20	172 43
17.	Accident Site Investigator	MS	1,530	120	183.6	40 Tri	67	103
18.	Accident Site Investigator Aide	HS	1,074	120	128.9	24 Yr	120	129
19.	Traffic Records Program Analyst	BA	100	80	8.0	40 Tri	67	7
20.	Traffic Records Systems Analyst	BA	50	40	2.0	40 Tri	67	3
21.	Emergency Medical Services Program Specialist	MS	50	80	4.0	40 Tri	67	3
22.	Emergency Medical Services Field Representative	BA	220	80	17.6	24 Yr	120	26
23.	Highway Engineer--Safety	BA	1,112	40	44.5	24 Yr	120	133
24.	Engineering Aide--Safety	HS	770	120	92.4	24 Yr	120	92
25.	Highway Safety Site Officer	HS	557	40	22.3	24 Yr	120	67
26.	Traffic Engineer	MS	820	40 8	32.8 6.6	24 4 Yr	120 20	98 16
27.	Engineering Aide--Traffic	HS	505	120 16	60.6 8.1	24 4 Yr	120 20	61 10
28.	Traffic Control Service Technician	HS	516	40 20	20.6 10.3	24 8 Yr	120 40	62 21
29.	Pedestrian Safety Program Specialist	MS	50	40	2.0	40 Tri	67	3
30.	Police Traffic Services Program Specialist	Jr. Col	100	80	8.0	40 Tri	67	7
31.	Police Traffic Services Officer	Jr. Col	1,211	80	96.9	20 Yr	100	121
32.	Police Traffic Services Patrolman	HS	39,274	140 20	5,498.4 785.5	20 4 Yr	100 20	3,927 786
33.	State Wrecker Operator	HS	3,981	40 4	159.2 15.9	16 2 Yr	80 10	319 40
34.	State Wrecker Field Representative	BA	55	80 8	4.4 .4	24 4 Yr	120 20	7 1
35.	School Bus Program Specialist	BA	50	80	4.0	40 Tri	67	3
36.	School Bus Driver Training Officer	BA	439	40 8	17.6 3.5	40 4 Tri	67 20	29 9

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ty Manpower Development and Research Center Five Year Program Appendix 1-2

TRAINING OF STATE GOVERNMENT SAFETY SPECIALIST TRAINEES

ents Exceed 1,000, Operating Personnel are Trained in Field)

Trainees											
Total Hrs. Refresher Training 1969-1973 (thousands)	TOTAL Training Hrs. 1969-1973 (thousands)	Place of Training & No. of Field Trainers	Center Professorial Requirements—Full-time Man Years/Year								
			Law	Medicine	Public or Bus. Adm.	Education	Police Science	Engr.	Psych.	Total No. of Center Professors
2	4	Center			.100					.10
7	23	Center			.392		.084	.084		.56
2	3	Center			.070					.07
996 125	1,493 199	Field (23)								
137 23	228 32	Field (4)								
13 1	21 2	Center			.228	.532				.76
205	328	Field (4)								
1,427 238	4,993 523	Field (71)								
268 45	1,117 116	Field (16)								
466 78	776 109	Field (13)								
52	86	Center	.860			.645			.645	2.15
—	2	Center	.037		.013					.05
116	174	Field (2)								
3	7	Center	.075		.095					.17
24 4	40 7	Center		.830	.332		.498			1.66
172 43	258 60	Field (5)								
103	286	Field (3)								
129	258	Field (3)								
7	15	Center			.056	.074		.166	.074	.37
3	5	Center			.130					.13
3	7	Center		.126	.054					.18
26	44	Center		.770	.330					1.10
133	178	Field (2)								
92	185	Center			1.525			3.095		4.62
67	89	Center			.558			1.672		2.23
98 16	131 23	Center			1.395			4.185		5.58
61 10	121 18	Center			.388			4.462		4.85
62 21	83 31	Center			1.290			3.870		5.16
3	5	Center			.033	.097				.13
7	15	Center			.044	.167	.159			.37
121	218	Field (3)								
3,927 786	9,426 1,571	Field (158)								
319 40	478 56	Field (8)								
7 1	11 2	Center		.073	.167	.095		.095		.43
3	7	Center			.090	.090				.18
29 9	47 12	Center				1.680			.720	2.40

				Field Trainers				
	Generalized Job Title	Entering Education*	1973 Estimated Number of Field Trainers	Hrs. Entry Training Per Individual	Total Hrs. Entry Training (thousands)	Hrs. Refresher Training Per Individual	Hrs. Refresher Training Per Individual 1969-1973	Total Hrs. Refreshe Training 1969-197 (thousand
4.	Motor Vehicle Inspector (incl. Motorcycles)	HS	23	80/12	1.84/.28	32/4 Yr	160/20	3.68/.
5.	Motor Vehicle Station Inspector	HS	4	160/16	.64/.06	48/8 Yr	240/40	.96/.
7.	Driver Education Supervisor	MS	4	80	.32	80 Tri	134	.54
8.	Driver Education Teacher	BA	71	600/48	42.60/3.41	48/8 Yr	240/40	17.04/2.8
9.	Driver Retraining Instructor	BA	16	760/64	12.16/1.02	48/8 Yr	240/40	3.84/.
10.	Driver License Examiner (incl. Motorcycles)	HS	13	160/16	13.31/.21	48/8 Yr	240/40	3.12/.
13.	Traffic Court Judge	Law Deg.	2	80	.16	32 Yr	160	.32
16.	Breath Examiner Specialist	HS	5	80/16	.40/.08	32/8 Yr	160/40	.80/.
17.	Accident Site Investigator	MS	3	240	.72	80 Tri	134	.40
18.	Accident Site Investigator Aide	HS	3	240	.72	48 Yr	240	.72
23.	Highway Engineer--Safety	BA	2	80	.16	48 Yr	240	.48
31.	Police Traffic Services Officer	Jr. Col	3	160	.48	40 Yr	200	.60
32.	Police Traffic Services Patrolman	HS	158	280/40	44.24/6.32	40/8 Yr	200/40	31.60/6.3
33.	State Wrecker Operator	HS	8	80/8	.64/.06	32/4 Yr	160/20	1.28/.

Total

Source for Entering Education, Estimated Manpower Requirements, Hours of Entry Training and Hours of Refresher Training: Booz, Allen & Hamilton's report to NHSB, Safety Specialist Manpower, Manpower Requirements, Vol. I, Appendix B, August 15, 1968.

* HS = High School, BA = BA or BS Degree, MS = MS or MA Degree

Note: Where the number of hours in training are shown as two figures (example - 50/10), the first figure represents the total number of training hours and the second represents the portion of those hours devoted to laboratory training.

Substitute 1 - Prof.
Motor

Substitute 2 - Prof.
Drive
8) an
31, a
Train
Motor

12/13

tal rs. esher ning -1973 sands)	TOTAL Training Hrs. 1969-1973 (thousands)	Place of Training	Center Professorial Requirements--Full-time Man Years/Year							
			Law	Medicine	Public or Bus. Adm.	Education	Police Science	Engr.	Psych.	Total No. of Center Professors
68 .46	5.52 .74	Center						.210		.21
96 .16	1.60 .22	Center			.009	.015		.036		.06
54	.86	Center			.006	.014				.02
04 2.84	59.64 6.25	Center				1.484			.636	2.12
84 .64	16.00 1.66	Center				.285		.142	.143	.57
12 .52	16.43 .73	Center			.072				.408	.48
32	.48	Center	.007		.003					.01
80 .20	1.20 .28	Center	.015		.030		.015			.06
40	1.12	Center			.002		.007	.021		.03
72	1.44	Center			.010		.004	.026		.04
48	.64	Center			.005			.015		.02
60	1.08	Center			.019		.011			.03
60 6.32	75.84 12.64	Center	.442	.221		1.138	1.359			3.16
28 .16	1.92 .22	Center		.035	.023	.012				.07
tal Professorial Requirements:			1.436	2.055	7.469	6.328	2.137	18.079	2.626	40.13
of. Requirements without tor Vehicle Inspector (No.4):			1.436	2.055	7.469	6.328	2.137	17.869	2.626	39.92
of. Requirements without iver Training (Nos. 6, 7, and and Police Training (Nos. 30, , and 32) and School Bus aining (Nos. 35 and 36) and tor Vehicle Inspector (No. 4):			.994	1.834	7.082	1.223	.608	17.869	1.270	30.88

Appendix 1-3

Five Year Program

DISTRIBUTION OF STATE HIGHWAY SAFETY OPERATING PERSONNEL TO FEDERAL PROGRAMS AND PROFESSORIAL REQUIREMENTS FOR TRAINING NEEDS

	Number to be Trained		University or Highway Safety Center Professors by Discipline Full-Time Man-Years/Year							
Federal Program	For Direct Assign-ments	For Teaching of others	Law	Medi-cine	Bus. or Public Admin.	Educa-tion	Police Sciences	Engi-neering	Psy-chology	Total
Planning and Administration	176	--	--	--	.562	--	.084	.084	--	.73
Motor Vehicle Program	489	4	--	--	.099	1.785	--	.036	.720	2.64
Driver and Community Program	730	106	.979	--	.417	2.960	--	.142	1.832	6.33
Driver Environment Program	3,218	2	--	--	5.194	.097	--	17.299	--	22.59
Safety Operations Program	777	180	.457	2.055	1.197	1.486	2.053	.308	.074	7.63
Total	5,390	292	1.436	2.055	7.469	6.328	2.137	17.869	2.626	39.92

Single Highway Safe

PROFESSORIAL REQUIREMENTS FOR T

(When Estimated Manpower Requireme

Generalized Job Title	Entering Education*	1978 Estimated Manpower Requirements	Safety Specialist T			
			Hrs. Entry Training Per Individual	Total Hrs. Entry Training (thousands)	Hrs. Refresher Training Per Individual	Hrs. Refresher Training Per Individual 1969-1978
1. Governor's Highway Safety Program Director	BA	50	40	2.0	24 Tri	80
2. Highway Safety Program Analyst	BA	102	160	16.3	40 Tri	134
3. Highway Safety Public Information Officer	BA	28	40	1.1	40 Tri	134
4. Motor Vehicle Inspector (incl. Motorcycles)	HS	15,123	40 6	604.9 90.7	16 2 Yr	160 20
5. Motor Vehicle Station Inspector	HS	1,463	80 8	117.0 11.7	24 4 Yr	240 40
6. Driver Training Program Specialist	MS	200	40 4	8.0 .8	40 4 Tri	134 14
7. Driver Education Supervisor	MS	3,063	40	122.5	40 Tri	134
8. Driver Education Teacher	BA	15,900	300 24	4,770.0 381.6	24 4 Yr	240 40
9. Driver Retraining Instructor	BA	2,800	380 32	1,064.0 89.6	24 4 Yr	240 40
10. Driver License Examiner (incl. Motorcycle)	HS	4,530	80 8	362.4 36.2	24 4 Yr	240 40
11. Driver License Hearing Officer	HS	520	80	41.6	24 Yr	240
12. Codes and Laws Program Specialist	Law Deg	50	40	2.0	—	—
13. Traffic Court Judge	Law Deg	1,570	40	62.8	16 Yr	160
14. Traffic Court Program Specialist	Law Deg	50	80	4.0	32 Tri	106
15. Alcohol Technical Specialist	BA	240	80 12	19.2 2.9	24 4 Yr	240 40
16. Breath Examiner Specialist	HS	2,300	40 8	92.0 18.4	16 4 Yr	160 40
17. Accident Site Investigator	MS	1,590	120	190.8	40 Tri	134
18. Accident Site Investigator Aide	HS	1,110	120	133.2	24 Yr	240
19. Traffic Record Program Analyst	BA	100	80	8.0	40 Tri	134
20. Traffic Records Systems Analyst	BA	50	40	2.0	40 Tri	134
21. Emergency Medical Services Program Specialist	MS	50	80	4.0	40 Tri	134
22. Emergency Medical Services Field Representative	BA	231	80	18.5	24 Yr	240
23. Highway Engineer--Safety	BA	1,160	40	46.4	24 Yr	240
24. Engineering Aide--Safety	HS	800	120	96.0	24 Yr	240
25. Highway Safety Site Officer	HS	557	40	22.3	24 Yr	240
26. Traffic Engineer	MS	850	40 8	34.0 6.8	24 4 Yr	240 40
27. Engineering Aide--Traffic	HS	540	120 16	64.8 8.6	24 4 Yr	240 40
28. Traffic Control Service Technician	HS	540	40 20	21.6 10.8	24 8 Yr	240 40
29. Pedestrian Safety Program Specialist	MS	50	40	2.0	40 Tri	134
30. Police Traffic Services Program Specialist	Jr. Col.	100	80	8.0	40 Tri	134
31. Police Traffic Services Officer	Jr. Col.	1,270	80	101.6	20 Yr	200
32. Police Traffic Services Patrolman	HS	40,600	140 20	5,684.0 812.0	20 4 Yr	200 40
33. State Wrecker Operator	HS	4,250	40 4	170.0 17.0	16 2 Yr	160 20
34. State Wrecker Field Representative	BA	60	80 8	4.8 .5	24 4 Yr	240 40
35. School Bus Program Specialist	BA	50	80	4.0	40 Tri	134
36. School Bus Driver Training Officer	BA	470	40 8	18.8 3.8	40 4 Tri	134 40

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Highway Safety Manpower Development and Research Center

Ten Year Program

Appendix 1-4

REMENTS FOR TRAINING OF STATE GOVERNMENT SAFETY SPECIALIST TRAINEES

wer Requirements exceed 100, operating personnel are trained in field)

Specialist Trainees				Center Professorial Requirements--Full-time Man Years/Year							
Hrs. Refresher Training Per Individual 1969-1978	Total Hrs. Refresher Training 1969-1978 (thousands)	TOTAL Training Hrs. 1969-1978 (thousands)	Place of Training & No. of Field Trainers	Law	Medicine	Public or Bus. Adm.	Education	Police Science	Engr.	Psych.	Total No. of Center Professors
80	4	6	Center			.080					.08
134	14	30	Field (1)								
134	4	5	Center			.060					.06
160 20	2,420 303	3,025 393	Field (23)								
240 40	351 59	468 70	Field (4)								
134 14	27 3	35 4	Field (1)								
134	410	533	Field (3)								
240 40	3,816 636	8,586 1,018	Field (64)								
240 40	672 112	1,736 202	Field (13)								
240 40	1,087 181	1,450 217	Field (12)								
240	125	166	Field (1)								
—	—	2	Center	.022		.008					.03
160	251	314	Field (2)								
106	5	9	Center	.053		.067					.12
240 40	58 10	77 13	Field (1)								
160 40	368 92	460 110	Field (5)								
134	213	514	Field (2)								
240	266	400	Field (2)								
134	13	21	Center			.040	.054		.122	.054	.27
134	7	9	Center			.110					.11
134	7	11	Center		.091	.039					.13
240	55	74	Field (1)								
240	278	325	Field (2)								
240	192	288	Field (2)								
240	134	156	Field (1)								
240 40	204 34	238 41	Field (2)								
240 40	130 22	194 30	Field (2)								
240 40	130 43	151 54	Field (2)								
134	7	9	Center			.028	.082				.11
134	13	21	Center			.032	.122	.116			.27
200	254	356	Field (2)								
200 40	8,120 1,624	13,804 2,436	Field (118)								
160 20	680 85	850 102	Field (7)								
240 40	14 2	19 3	Center		.064	.148	.084		.084		.38
134	7	11	Center			.065	.065				.13
134 40	63 19	82 23	Field (1)								

Generalized Job Title	Entering Education*	1978 Estimated Number of Field Trainers	Field Trainers Hrs. Entry Training Per Individual	Total Hrs. Entry Training (thousands)	Hrs. Refresher Training Per Individual	Hrs. Refresher Training Per Individual 1969-1978
2. Highway Safety Program Analyst	BA	1	320	.32	80 Tri	268
4. Motor Vehicle Inspector (incl. Motorcycles)	HS	23	80/12	1.84/.28	32/4 Yr	320/40
5. Motor Vehicle Station Inspector	HS	4	160/16	.64/.06	48/8 Yr	480/80
6. Driver Training Program Specialist	MS	1	80/8	.08/.01	80/8 Tri	268/28
7. Driver Education Supervisor	MS	3	80	.24	80 Tri	268
8. Driver Education Teacher	BA	64	600/48	38.40/3.07	48/8 Yr	480/80
9. Driver Retraining Instructor	BA	13	760/64	9.88/.83	48/8 Yr	480/80
10. Driver License Examiner (incl. Motorcycles)	HS	12	160/16	1.92/.19	48/8 Yr	480/80
11. Driver License Hearing Officer	HS	1	160	.16	48 Yr	480
13. Traffic Court Judge	Law Deg	2	80	.16	32 Yr	320
15. Alcohol Technical Specialist	BA	1	160/24	.16/.02	48/8 Yr	480/80
16. Breath Examiner Specialist	HS	5	80/16	.40/.08	32/8 Yr	320/80
17. Accident Site Investigator	MS	2	240	.48	80 Tri	268
18. Accident Site Investigator Aide	HS	2	240	.48	48 Yr	480
22. Emergency Medical Services Field Representative	BA	1	160	.16	48 Yr	480
23. Highway Engineer--Safety	BA	2	80	.16	48 Yr	480
24. Engineering Aide--Safety	HS	2	240	.48	48 Yr	480
25. Highway Safety Site Officer	HS	1	80	.08	48 Yr	480
26. Traffic Engineer	MS	2	80/8	.16/.02	48/8 Yr	480/80
27. Engineering Aide--Traffic	HS	2	240/32	.48/.06	48/8 Yr	480/80
28. Traffic Control Services Technician	HS	2	80/40	.16/.08	48/16 Yr	480/160
31. Police Traffic Services Officer	Jr. Col.	2	160	.32	40 Yr	400
32. Police Traffic Services Patrolman	HS	118	280/40	33.04/4.72	40/8 Yr	400/80
33. State Wrecker Operator	HS	7	80/8	.56/.06	32/4 Yr	320/40
36. School Bus Driver Training Officer	BA	1	80/16	.08/.02	80/8 Tri	268/80

Source for Entering Education, Estimated Manpower Requirements, Hours of Entry Training and Hours of Refresher Training: Booz, Allen & Hamilton's report to NHSB, Safety Specialist Manpower, Manpower Requirements, Vol. I, Appendix B, August 15, 1968.

Substitute 1

* HS = High School, BA = BA or BS Degree, MS = MS or MA Degree

Substitute 2

Note: Where the number of hours in training are shown as two figures (example - 50/10), the first figure represents the total number of training hours and the second represents the portion of those hours devoted to laboratory training.

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Field Trainers					Center Professorial Requirements--Full-time Man Years/Year							
Hrs. efresher raining Per dividual	Hrs. Refresher Training Per Individual 1969-1978	Total Hrs. Refresher Training 1969-1978 (thousands)	TOTAL Training Hrs. 1969-1978 (thousands)	Place of Training	Law	Medicine	Public or Bus. Adm.	Education	Police Science	Engr.	Psych.	Total No. of Center Professors
80 Tri	268	.27	.59	Center			.007		.001	.002		.01
32 4 Yr	320 40	7.36 .92	9.20 1.20	Center						.180		.18
48 8 Yr	480 80	1.92 .32	2.56 .38	Center			.008	.012		.030		.05
80 8 Tri	268 28	.27 .03	.35 .04	Center			.003	.007				.01
80 Tri	268	.80	1.04	Center			.003	.007				.01
48 8 Yr	480 80	30.72 5.12	69.12 8.19	Center				.889			.381	1.27
48 8 Yr	480 80	6.24 1.04	16.12 1.87	Center				.150		.075	.075	.30
48 8 Yr	480 80	5.76 .96	7.68 1.15	Center			.023				.127	.15
48 Yr	480	.48	.64	Center	.004			.003			.003	.01
32 Yr	320	.64	.80	Center	.007		.003					.01
48 8 Yr	480 80	.48 .08	.64 .10	Center		.005	.002		.003			.01
32 8 Yr	320 80	1.60 .40	2.00 .48	Center	.013		.025		.012			.05
80 Tri	268	.54	1.02	Center			.001		.002	.007		.01
48 Yr	480	.96	1.44	Center			.005		.002	.013		.02
48 Yr	480	.48	.64	Center		.007	.003					.01
48 Yr	480	.96	1.12	Center			.003			.007		.01
48 Yr	480	.96	1.44	Center			.007			.013		.02
48 Yr	480	.48	.56	Center			.003			.007		.01
48 8 Yr	480 80	.96 .16	1.12 .18	Center			.005			.015		.02
48 8 Yr	480 80	.96 .16	1.44 .22	Center			.002			.028		.03
48 16 Yr	480 160	.96 .32	1.12 .40	Center			.008			.022		.03
40 Yr	400	.80	1.12	Center			.006		.004			.01
40 8 Yr	400 80	47.20 9.44	80.24 14.16	Center	.239	.120		.616	.735			1.71
32 4 Yr	320 40	2.24 .28	2.80 .34	Center		.025	.017	.008				.05
80 8 Tri	268 80	.27 .08	.35 .10	Center				.007			.003	.01
Total Professorial Requirements:					.338	.312	.811	2.106	.875	.605	.643	5.69
Substitute 1 - Prof. Requirements without Motor Vehicle Inspector (No. 4):					.338	.312	.811	2.106	.875	.425	.643	5.51
Substitute 2 - Prof. Requirements without Driver Training (Nos. 6, 7, and 8) and Police Training (Nos. 30, 31, and 32) and School Bus Training (Nos. 35 and 36) and Motor Vehicle Inspector (No 4):					.099	.192	.702	.393	.020	.425	.259	2.09

Single Highway Safety Manpow

PROFESSORIAL REQUIREMENTS FOR TRAININ

(When Estimated Manpower Requirements exce

			Safety Specialist Trainee				
Generalized Job Title	Entering Education*	1978 Estimated Manpower Requirements	Hrs. Entry Training Per Individual	Total Hrs. Entry Training (thousands)	Hrs. Refresher Training Per Individual	Hrs. Refresher Training Per Individual 1969-1978	Tot Hrs Refre Trai 1969- (thous
1. Governor's Highway Safety Program Director	BA	50	40	2.0	24 Tri	80	
2. Highway Safety Program Analyst	BA	102	160	16.3	40 Tri	134	1
3. Highway Safety Public Information Officer	BA	28	40	1.1	40 Tri	134	
4. Motor Vehicle Inspector (incl. Motorcycles)	HS	15,123	40 6	604.9 90.7	16 2 Yr	160 20	2,420 3
5. Motor Vehicle Station Inspector	HS	1,463	80 8	117.0 11.7	24 4 Yr	240 40	351 5
6. Driver Training Program Specialist	MS	200	40 4	8.0 8	40 4 Tri	134 14	27 3
7. Driver Education Supervisor	MS	3,063	40	122.5	40 Tri	134	41
8. Driver Education Teacher	BA	15,900	300 24	4,770.0 381.6	24 4 Yr	240 40	3,816 63
9. Driver Retraining Instructor	BA	2,800	380 32	1,064.0 89.6	24 4 Yr	240 40	672 1
10. Driver License Examiner (incl. Motorcycles)	HS	4,530	80 8	362.4 36.2	24 4 Yr	240 40	1,087 18
11. Driver License Hearing Officer	HS	520	80	41.6	24 Yr	240	12
12. Codes and Laws Program Specialist	Law Deg	50	40	2.0	—	—	—
13. Traffic Court Judge	Law Deg	1,570	40	62.8	16 Yr	160	251
14. Traffic Court Program Specialist	Law Deg	50	80	4.0	32 Tri	106	5
15. Alcohol Technical Specialist	BA	240	80 12	19.2 2.9	24 4 Yr	240 40	58 10
16. Breath Examiner Specialist	HS	2,300	40 8	92.0 18.4	16 4 Yr	160 40	368 92
17. Accident Site Investigator	MS	1,590	120	190.8	40 Tri	134	213
18. Accident Site Investigator Aide	HS	1,110	120	133.2	24 Yr	240	266
19. Traffic Record Program Analyst	BA	100	80	8.0	40 Tri	134	13
20. Traffic Records Systems Analyst	BA	50	40	2.0	40 Tri	134	7
21. Emergency Medical Services Program Specialist	MS	50	80	4.0	40 Tri	134	7
22. Emergency Medical Services Field Representative	BA	231	80	18.5	24 Yr	240	55
23. Highway Engineer--Safety	BA	1,160	40	46.4	24 Yr	240	278
24. Engineering Aide--Safety	HS	800	120	96.0	24 Yr	240	19
25. Highway Safety Site Officer	HS	557	40	22.3	24 Yr	240	13
26. Traffic Engineer	MS	850	40 8	34.0 6.8	24 4 Yr	240 40	204 3
27. Engineering Aide--Traffic	HS	540	120 16	64.8 8.6	24 4 Yr	240 40	130 22
28. Traffic Control Services Technician	HS	540	40 20	21.6 10.8	24 8 Yr	240 80	130 4
29. Pedestrian Safety Program Specialist	MS	50	40	2.0	40 Tri	134	7
30. Police Traffic Services Program Specialist	Jr. Col.	100	80	8.0	40 Tri	134	1
31. Police Traffic Services Officer	Jr. Col.	1,270	80	101.6	20 Yr	200	25
32. Police Traffic Services Patrolman	HS	40,600	140 20	5,684.0 812.0	20 4 Yr	200 40	8,120 1,
33. State Wrecker Operator	HS	4,250	40 4	170.0 17.0	16 2 Yr	160 20	680 85
34. State Wrecker Field Representative	BA	60	80 8	4.8 .5	24 4 Yr	240 40	14 2
35. School Bus Program Specialist	BA	50	80	4.0	40 Tri	134	7
36. School Bus Driver Training Officer	BA	470	40 8	18.8 3.8	40 4 Tri	134 40	63 19

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ING OF STATE GOVERNMENT SAFETY SPECIALIST TRAINEES

xceed 1,000, operating personnel are trained in field)

inees			Center Professorial Requirements--Full·time Man Years/Year							
Total Hrs. efresher raining 969-1978 ousands)	TOTAL Training Hrs. 1969-1978 (thousands`	Place of Training & No. of Field Trainers	Law	Medicine	Public or Bus. Adm	Education	Police Science	Engr.	Psych.	Total No. of Center Professors
4	6	Center			.080					.08
14	30	Center			.266		.057	.057		.38
4	5	Center			.060					.06
,420 303	3,025 393	Field (23)								
351 59	468 70	Field (4)								
27 3	35 4	Center			.186	.434				.62
410	533	Field (3)								
,816 636	8,586 1,018	Field (64)								
672 112	1,736 202	Field (13)								
,087 181	1,450 217	Field (12)								
125	166	Center	.084			.063			.063	.21
—	2	Center	.022		.008					.03
251	314	Field (2)								
5	9	Center	.053		.067					.12
58 10	77 13	Center		.790	.316		.474			1.58
368 92	460 110	Field (5)								
213	514	Field (2)								
266	400	Field (2)								
13	21	Center			.040	.054		.122	.054	.27
7	9	Center			.110					.11
7	11	Center		.091	.039					.13
55	74	Center		.644	.276					.92
278	325	Field (2)								
192	288	Center			1.188			2.412		3,60
134	156	Center			.488			1.462		1.95
204 34	238 41	Center			1.255			3.765		5.02
130 22	194 30	Center			.315			3.625		3.94
130 43	151 54	Center			1.148			3.442		4.59
7	9	Center			.028	.082				.11
13	21	Center			.032	.122	.116			.27
254	356	Field (2)								
120 1,624	13,804 2,436	Field (118)								
680 85	850 102	Field (7)								
14 2	19 3	Center		.064	.148	.084		.084		.38
7	11	Center			.065	.065				.13
63 19	82 23	Center				1.505			.645	2.15

			Field Trainers			
Generalized Job Title	Entering Education*	1978 Estimated Number of Field Trainers	Hrs. Entry Training Per Individual	Total Hrs. Entry Training (thousands)	Hrs. Refresher Training Per Individual	Hrs. Refresher Training Per Individual 1969-1978
4. Motor Vehicle Inspector (incl. Motorcycles)	HS	23	80/12	1.84/.28	32/4 Yr	320/40
5. Motor Vehicle Station Inspector	HS	4	160/16	.64/.06	48/8 Yr	480/80
7. Driver Education Supervisor	MS	3	80	.24	80 Tri	268
8. Driver Education Teacher	BA	64	600/48	38.40/3.07	48/8 Yr	480/80
9. Driver Retraining Instructor	BA	13	760/64	9.88/.83	48/8 Yr	480/80
10. Driver License Examiner (incl. Motorcycles)	HS	12	160/16	1.92/.19	48/8 Yr	480/80
13. Traffic Court Judge	Law Deg	2	80	.16	32 Yr	320
16. Breath Examiner Specialist	HS	5	80/16	.40/.08	32/8 Yr	320/80
17. Accident Site Investigator	MS	2	240	.48	80 Tri	268
18. Accident Site Investigator Aide	HS	2	240	.48	48 Yr	480
23. Highway Engineer--Safety	BA	2	80	.16	48 Yr	480
31. Police Traffic Services Officer	Jr. Col.	2	160	.32	40 Yr	400
32. Police Traffic Services Patrolman	HS	118	280/40	33.04/4.72	40/8 Yr	400/80
33. State Wrecker Operator	HS	7	80/8	.56/.06	32/4 Yr	320/40

Source for Entering Education, Estimated Manpower Requirements, Hours of Entry Training and Hours of Refresher Training: Booz, Allen & Hamilton's report to NHSB, Safety Specialist Manpower, Manpower Requirements, Vol. I, Appendix B, August 15, 1968.

Substitute 1

Substitute 2

* HS = High School, BA = BA or BS Degree, MS = MS or MA Degree

Note: Where the number of hours in training are shown as two figures (example - 50/10), the first figure represents the total number of training hours and the second represents the portion of those hours devoted to laboratory training.

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rainers				Center Professorial Requirements--Full-time Man Years/Year							
rs. resher aining er vidual -1978	Total Hrs. Refresher Training 1969-1978 (thousands)	TOTAL Training Hrs. 1969-1978 (thousands)	Place of Training	Law	Medicine	Public or Bus. Adm.	Education	Police Science	Engr.	Psych.	Total No. of Center Professors
20 40	7.36 .92	9.20 1.20	Center						.180		.18
80 80	1.92 .32	2.56 .38	Center			.008	.012		.030		.05
68	.80	1.04	Center			.003	.007				.01
80 80	30.72 5.12	69.12 8.19	Center				.889			.381	1.27
80 80	6.24 1.04	16.12 1.87	Center				.150		.075	.075	.30
80 80	5.76 .96	7.68 1.15	Center			.023				.127	.15
20	.64	.80	Center	.007		.003					.01
320 80	1.60 .40	2.00 .48	Center	.013		.025		.012			.05
68	.54	1.02	Center			.001		.002	.007		.01
80	.96	1.44	Center			.005		.002	.013		.02
80	.96	1.12	Center			.003			.007		.01
00	.80	1.12	Center			.006		.004			.01
00 80	47.20 9.44	80.24 14.16	Center	.239	.120		.616	.735			1.71
320 40	2.24 .28	2.80 .34	Center		.025	.016	.009				.05
Total Professorial Requirements:				.418	1.734	6.208	4.092	1.402	15.281	1.345	30.48
titute 1 - Prof. Requirements without Motor Vehicle Inspector (No. 4):				.418	1.734	6.208	4.092	1.402	15.101	1.345	30.30
titute 2 - Prof. Requirements without Driver Training (Nos. 6, 7, and 8) and Police Training (Nos. 30, 31, and 32) and School Bus Training (Nos. 35 and 36) and Motor Vehicle Inspector (No. 4):				.179	1.614	5.916	.454	.547	15.101	.319	24.13

Typical Large State (California) Hig

PROFESSORIAL REQUIREMENTS FOR TRAIN

(When Estimated Manpower Requirements

			Safety Specialist Traine				
Generalized Job Title	Entering Education*	1973 Estimated Manpower Requirements	Hrs. Entry Training Per Individual	Total Hrs. Entry Training	Hrs. Refresher Training Per Individual	Hrs. Refresher Training Per Individual 1969-1973	T Ref Tr 196
1. Governor's Highway Safety Program Director	BA	1	40	40	24 Tri	40	
2. Highway Safety Program Analyst	BA	6	160	960	40 Tri	67	
3. Highway Safety Public Information Officer	BA	2	40	80	40 Tri	67	
4. Motor Vehicle Inspector (incl. Motorcycles)	HS	1,412	40 6	56,480 8,472	16 2 Yr	80 10	112,
5. Motor Vehicle Station Inspector	HS	123	80 8	9,840 984	24 4 Yr	120 20	14,
6. Driver Training Program Specialist	MS	4	40 4	160 16	40 4 Tri	67 7	
7. Driver Education Supervisor	MS	57	40	2,280	40 Tri	67	3,
8. Driver Education Teacher	BA	1,172	300 24	351,600 28,128	24 4 Yr	120 20	140,
9. Driver Retraining Instructor	BA	234	380 32	88,920 7,488	24 4 Yr	120 20	28,
10. Driver License Examiner (incl. Motorcycle)	HS	428	80 8	34,240 3,424	24 4 Yr	120 20	51,
11. Driver License Hearing Officer	HS	42	80	3,360	24 Yr	120	5,
12. Codes and Laws Program Specialist	Law Deg	1	40	40	---	---	-
13. Traffic Court Judge	Law Deg	155	40	6,200	16 Yr	80	12,
14. Traffic Court Program Specialist	Law Deg	1	80	80	32 Tri	53	
15. Alcohol Technical Specialist	BA	14	80 12	1,120 168	24 4 Yr	120 20	1,
16. Breath Examiner Specialist	HS	230	40 8	9,200 1,840	16 4 Yr	80 20	18,
17. Accident Site Investigator	MS	69	120	8,280	40 Tri	67	4,
18. Accident Site Investigator Aide	HS	47	120	5,640	24 Yr	120	5,
19. Traffic Record Program Analyst	BA	2	80	160	40 Tri	67	
20. Traffic Records Systems Analyst	BA	1	40	40	40 Tri	67	
21. Emergency Medical Services Program Specialist	MS	1	80	80	40 Tri	67	
22. Emergency Medical Services Field Representative	BA	24	80	1,920	24 Yr	120	2,
23. Highway Engineer--Safety	BA	48	40	1,920	24 Yr	120	5,
24. Engineering Aide--Safety	HS	32	120	3,640	24 Yr	120	3,
25. Highway Safety Site Officer	HS	25	40	1,000	24 Yr	120	3,
26. Traffic Engineer	MS	36	40 8	1,440 288	24 4 Yr	120 20	4
27. Engineering Aide--Traffic	HS	24	120 16	2,880 384	24 4 Yr	120 20	2
28. Traffic Control Service Technician	HS	11	40 20	440 220	24 8 Yr	120 40	1
29. Pedestrian Safety Program Specialist	MS	1	40	40	40 Tri	67	
30. Police Traffic Services Program Specialist	Jr. Col.	2	80	160	40 Tri	67	
31. Police Traffic Services Officer	Jr. Col.	71	80	5,680	20 Yr	100	7,
32. Police Traffic Services Patrolman	HS	2,321	140 20	324,940 46,420	20 4 Yr	100 20	232,
33. State Wrecker Operator	HS	416	40 4	16,640 1,664	16 2 Yr	80 10	33,
34. State Wrecker Field Representative	BA	7	80 8	560 56	24 4 Yr	120 20	84
35. School Bus Program Specialist	BA	1	80	80	40 Tri	67	
36. School Bus Driver Training Officer	BA	23	40 8	920 184	40 4 Tri	67 20	1,

ighway Safety Manpower Development and Research Center

Five Year Program

Appendix 1-6

INING OF STATE GOVERNMENT SAFETY SPECIALIST TRAINEES

s exceed 100, operating personnel are trained in field)

nees			Center Professorial Requirements--Full-time Man Years/Year							
Total Hrs. efresher Training 969-1973	TOTAL Training Hrs. 1969-1973	Place of Training & No. of Field Trainers	Law	Medicine	Public or Bus. Adm.	Education	Police Science	Engr.	Psych.	Total No. of Center Professors
40	80	Center			.002					.002
402	1,362	Center			.024		.005	.005		.034
134	214	Center			.006					.006
12,960 14,120	169,440 22,592	Field (3)								
14,760 2,460	24,600 3,444	Field (1)								
268 28	428 44	Center			.005	.010				.015
3,820	6,100	Center			.046	.107				.153
40,640 23,440	492,240 51,568	Field (7)								
28,080 4,680	117,000 12,168	Field (2)								
51,360 8,560	85,600 11,984	Field (2)								
5,040	8,400	Center	.084			.063			.063	.210
---	40	Center	.0008		.0003					.001
12,400	18,000	Field (1)								
53	133	Center	.001		.002					.003
1,680 280	2,800 448	Center		.058	.023		.034			.115
18,400 4,600	27,600 6,440	Field (1)								
4,623	12,903	Center			.016		.081	.225		.322
5,640	11,280	Center			.071		.028	.183		.282
134	294	Center			.001	.002		.003	.001	.007
67	107	Center			.003					.003
67	147	Center		.003	.001					.004
2,880	4,800	Center		.084	.036					.120
5,760	7,680	Center			.048			.144		.192
3,840	7,480	Center			.062			.125		.187
3,000	4,000	Center			.025			.075		.100
4,320 720	5,760 1,008	Center			.061			.184		.245
2,880 480	5,760 864	Center			.018			.212		.230
1,320 440	1,760 660	Center			.028			.082		.110
67	107	Center			.001	.002				.003
134	294	Center			.001	.003	.003			.007
7,100	12,780	Center			.202		.118			.320
32,100 46,420	557,040 92,840	Field (10)								
33,280 4,160	49,920 5,824	Field (1)								
840 140	1,400 196	Center		.009	.022	.012		.012		.055
67	147	Center			.002	.002				.004
1,541 460	2,461 644	Center				.088			.037	.125

				Field Trainers			
Generalized Job Title	Entering Education*	1973 Estimated Number of Field Trainers	Hrs. Entry Training Per Individual	Total Hrs. Entry Training	Hrs. Refresher Training Per Individual	Hrs. Refresher Training Per Individual 1969-1973	Re Tr 19
4. Motor Vehicle Inspector (incl. Motorcycles)	HS	3	80/12	240/36	32/4 Yr	160/20	
5. Motor Vehicle Station Inspector	HS	1	160/16	160/16	48/8 Yr	240/40	
8. Driver Education Teacher	BA	7	600/48	4,200/336	48/8 Yr	240/40	1,
9. Driver Retraining Instructor	BA	2	760/64	1,520/128	48/8 Yr	240/40	
10. Driver License Examiner (incl. Motorcycles)	HS	2	160/16	320/32	48/8 Yr	240/40	
13. Traffic Court Judge	Law Deg	1	40	40	32 Yr	160	
16. Breath Examiner Specialist	HS	1	80/16	80/16	32/8 Yr	160/40	
32. Police Traffic Services Patrolman	HS	10	280/40	2,800/400	40/8 Yr	200/40	2,
33. State Wrecker Operator	HS	1	80/8	80/8	32/4 Yr	160/20	

To

Source for Entering Education, Estimated Manpower Requirements, Hours of Entry Training and Hours of Refresher Training: Booz, Allen & Hamilton's report to NHSB, Safety Specialist Manpower, Manpower Requirements, Vol. I, Appendix B, August 15, 1968.

Substitute 1 -

Substitute 2 -

* HS = High School, BA = BA or BS Degree, MS = MS or MA Degree

Note: Where the number of hours in training are shown as two figures (example - 50/10), the first figure represents the total number of training hours and the second represents the portion of those hours devoted to laboratory training.

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er ng ual 73	Total Hrs. Refresher Training 1969-1973	TOTAL Training Hrs. 1969-1973	Place of Training	Center Professorial Requirements--Full-time Man Years/Year							
				Law	Medicine	Public or Bus. Adm.	Education	Police Science	Engr.	Psych.	Total No. of Center Professors
	480/60	720/96	Center						.028		.028
	240/40	400/56	Center			.003	.004		.010		.017
	1,680/280	5,880/616	Center				.146			.062	.208
	480/80	2,000/208	Center				.035		.018	.018	.071
	480/80	800/112	Center			.005				.026	.031
	160	200	Center	.004		.001					.005
	160/40	240/56	Center	.003		.005		.003			.011
	2,000/400	4,800/800	Center	.028	.014		.072	.086			.200
	160/20	240/28	Center		.004	.003	.002				.009
	Total Professorial Requirements:			.121	.172	.723	.548	.358	1.306	.207	3.435
ute 1 -	Prof. Requirements without Motor Vehicle Inspector (No. 4):			.121	.172	.723	.548	.358	1.278	.207	3.407
ute 2 -	Prof. Requirements without Driver Training (Nos. 6, 7, and 8) and Police Training (Nos. 30, 31, and 32) and School Bus Training (Nos. 35 and 36) and Motor Vehicle Inspector (No. 4):			.093	.158	.467	.120	.151	1.278	.108	2.375

Typical Large State (California)

PROFESSORIAL REQUIREMENTS FOR

(When Estimated Manpower Requireme

			Safety Specialist			
Generalized Job Title	Entering Education*	1978 Estimated Manpower Requirements	Hrs. Entry Per Individual	Total Hrs. Entry Training	Hrs. Refresher Training Per Individual	Hrs. Refresher Training Per Individual 1969-1978
1. Governor's Highway Safety Program Director	BA	1	40	40	24 Tri	80
2. Highway Safety Program Analyst	BA	6	160	960	40 Tri	134
3. Highway Safety Public Information Officer	BA	2	40	80	40 Tri	134
4. Motor Vehicle Inspector (incl. Motorcycles)	HS	1,691	40 6	67,640 10,146	16 2 Yr	160 20
5. Motor Vehicle Station Inspector	HS	156	80 8	12,480 1,248	24 4 Yr	240 40
6. Driver Training Program Specialist	MS	4	40 4	160 16	40 4 Tri	134 14
7. Driver Education Supervisor	MS	57	40	2,280	40 Tri	134
8. Driver Education Teacher	BA	1,570	300 24	471,000 37,680	24 4 Yr	240 40
9. Driver Retraining Instructor	BA	278	380 32	105,640 8,896	24 4 Yr	240 40
10. Driver License Examiner (incl. Motorcycles)	HS	515	80 8	41,200 4,120	24 4 Yr	240 40
11. Driver License Hearing Officer	HS	52	80	4,160	24 Yr	240
12. Codes and Laws Program Specialist	Law Deg	1	40	40	—	—
13. Traffic Court Judge	Law Deg	180	40	7,200	16 Yr	160
14. Traffic Court Program Specialist	Law Deg	1	80	80	32 Tri	106
15. Alcohol Technical Specialist	BA	16	80 12	1,280 192	24 4 Yr	240 40
16. Breath Examiner Specialist	HS	260	40 8	10,400 2,080	16 4 Yr	160 40
17. Accident Site Investigator	MS	71	120	8,520	40 Tri	134
18. Accident Site Investigator Aide	HS	48	120	5,760	24 Yr	240
19. Traffic Records Program Analyst	BA	2	80	160	40 Tri	134
20. Traffic Records Systems Analyst	BA	1	40	40	40 Tri	134
21. Emergency Medical Services Program Specialist	MS	1	80	80	40 Tri	134
22. Emergency Medical Services Field Representative	BA	27	80	2,160	24 Yr	240
23. Highway Engineer--Safety	BA	49	40	1,960	24 Yr	240
24. Engineering Aide--Safety	HS	33	120	3,960	24 Yr	240
25. Highway Safety Site Officer	HS	25	40	1,000	24 Yr	240
26. Traffic Engineer	MS	37	40 8	1,480 296	24 4 Yr	240 40
27. Engineering Aide—Traffic	HS	24	120 16	2,880 384	24 4 Yr	240 40
28. Traffic Control Service Technician	HS	11	40 20	440 220	24 8 Yr	240 80
29. Pedestrian Safety Program Specialist	MS	1	40	40	40 Tri	134
30. Police Traffic Services Program Specialist	Jr. Col	2	80	160	40 Tri	134
31. Police Traffic Services Officer	Jr. Col	75	80	6,000	20 Yr	200
32. Police Traffic Services Patrolman	HS	2,400	140 20	336,000 48,000	20 4 Yr	200 40
33. State Wrecker Operator	HS	430	40 4	17,200 1,720	16 2 Yr	160 20
34. State Wrecker Field Representative	BA	8	80 8	640 64	24 4 Yr	240 40
35. School Bus Program Specialist	BA	1	80	80	40 Tri	134
36. School Bus Driver Training Officer	BA	28	40 8	1,120 224	40 4 Tri	134 40

NING OF STATE GOVERNMENT SAFETY SPECIALIST TRAINEES

Exceed 100, Operating Personnel are Trained in Field)

nees										
tal rs esher ining -1978	TOTAL Training Hrs. 1969-1978	Place of Training & No. of Field Trainers	Center Professorial Requirements--Full-time Man Years/Year							
			Law	Medicine	Public or Bus. Adm.	Education	Police Science	Engr.	Psych.	Total No. of Center Professors
80	120	Center			.002					.002
804	1,764	Center			.016		.003	.003		.022
268	348	Center			.004					.004
,560 33,820	338,200 43,966	Field (3)								
,440 6,240	49,920 7,488	Field (1)								
536 56	696 72	Center			.004	.008				.012
638	9,918	Center			.037	.087				.124
,800 62,800	847,800 100,480	Field (7)								
,720 11,120	172,360 20,016	Field (2)								
,600 20,600	164,800 24,720	Field (3)								
480	16,640	Center	.083			.063			.062	.208
—	40	Center	.0008		.0002					.001
800	36,000	Field (1)								
106	186	Center	.001		.001					.002
,840 640	5,120 832	Center		.053	.021		.032			.106
600 10,400	52,000 12,480	Field (1)								
,514	18,034	Center			.011		.056	.158		.225
,520	17,280	Center			.054		.022	.140		.216
268	428	Center			.001	.001		.002	.001	.005
134	174	Center			.002					.002
134	214	Center		.002	.001					.003
480	8,640	Center		.076	.032					.108
,760	13,720	Center			.043			.129		.172
,920	11,880	Center			.049			.100		.149
,000	7,000	Center			.022			.066		.088
880 1,480	10,360 1,776	Center			.055			.163		.218
760 960	8,640 1,344	Center			.014			.161		.175
640 880	3,080 1,100	Center			.024			.070		.094
134	174	Center			.001	.001				.002
268	428	Center			.001	.002	.002			.005
,000	21,000	Center			.166		.097			.263
,000 96,000	816,000 144,000	Field (7)								
800 8,600	86,000 10,320	Field (1)								
20 320	2,560 384	Center		.009	.020	.011		.011		.051
134	214	Center			.002	.001				.003
52 1,120	4,872 1,344	Center				.090			.038	.128

Generalized Job Title	Entering Education*	1978 Estimated Number of Field Trainers	Field Trainers Hrs. Entry Training Per Individual	Total Hrs. Entry Training	Hrs. Refresher Training Per Individual	Hrs. Refresher Training Per Individual 1969-1978
4. Motor Vehicle Inspector (incl. Motorcycles)	HS	3	80/12	240/36	32/4 Yr	320/40
5. Motor Vehicle Station Inspector	HS	1	160/16	160/16	48/8 Yr	480/80
8. Driver Education Teacher	BA	7	600/48	4,200/336	48/8 Yr	480/80
9. Driver Retraining Instructor	BA	2	760/64	1,520/128	48/8 Yr	480/80
10. Driver License Examiner (incl. Motorcycles)	HS	3	160/16	480/48	48/8 Yr	480/80
13. Traffic Court Judge	Law Deg	1	80	80	32 Yr	320
16. Breath Examiner Specialist	HS	1	80/16	80/16	32/8 Yr	320/80
32. Police Traffic Services Patrolman	HS	7	280/40	1,960/280	40/8 Yr	400/80
33. State Wrecker Operator	HS	1	80/8	80/8	32/4 Yr	320/40

Source for Entering Education, Estimated Manpower Requirements, Hours of Entry Training and Hours of Refresher Training: Booz, Allen & Hamilton's report to NHSB, Safety Specialist Manpower, Manpower Requirements, Vol. I, Appendix B, August 15, 1968.

Substitute 1

Substitute 2

* HS = High School, BA = BA or BS Degree, MS = MS or MA Degree

Note: Where the number of hours in training are shown as two figures (example - 50/10), the first figure represents the total number of training hours and the second represents the portion of those hours devoted to laboratory training.

Field Trainers					Center Professorial Requirements--Fulltime Man Years/Year							
Hrs. fresher raining Per dividual	Hrs. Refresher Training Per Individual 1969-1978	Total Hrs. Refresher Training 1969-1978	TOTAL Training Hrs. 1969-1978	Place of Training	Law	Medicine	Public or Bus. Adm.	Education	Police Science	Engr.	Psych.	Total No. of Center Professors
32 4 Yr	320 40	960 120	1,200 156	Center						.023		.023
48 8 Yr	480 80	480 80	640 96	Center			.002	.003		.008		.013
48 8 Yr	480 80	3,360 560	7,560 896	Center				.097			.042	.139
48 8 Yr	480 80	960 160	2,480 288	Center				.023		.011	.011	.045
48 8 Yr	480 80	1,440 240	1,920 288	Center			.006				.033	.039
32 Yr	320	320	400	Center	.004		.001					.005
32 8 Yr	320 80	320 80	400 96	Center	.003		.005		.002			.010
40 8 Yr	400 80	2,800 560	4,760 840	Center	.014	.007		.037	.044			.102
32 4 Yr	320 40	320 40	400 48	Center		.004	.002	.001				.007
Total Professorial Requirements:					.106	.151	.599	.425	.258	1.045	.187	2.771
Substitute 1 - Prof. Requirements Without Motor Vehicle Inspector (No. 4):					.106	.151	.599	.425	.258	1.022	.187	2.748
Substitute 2 - Prof. Requirements Without Driver Training (Nos. 6, 7, and 8) and Police Training (Nos. 30, 31, and 32) and School Bus Training (Nos. 35 and 36) and Motor Vehicle Inspector (No. 4):					.092	.144	.389	.103	.115	1.022	.107	1.972

Typical Medium State (Alabama) Highway Saf

PROFESSORIAL REQUIREMENTS FOR TRAINING OF

(When Estimated Manpower Requirements exceed

	Generalized Job Title	Entering Education*	1973 Estimated Manpower Requirements	Safety Specialist Traine				
				Hrs. Entry Training Per Individual	Total Hrs. Entry Training	Hrs. Refresher Training Per Individual	Hrs. Refresher Training Per Individual 1969-1973	Tot Hr Refre Trai 1969-
1.	Governor's Highway Safety Program Director	BA	1	40	40	24 Tri	40	
2.	Highway Safety Program Analyst	BA	2	160	320	40 Tri	67	13
3.	Highway Safety Public Information Officer	BA	1	40	40	40 Tri	67	6
4.	Motor Vehicle Inspector (incl. Motorcycles)	HS	225	40 6	9,000 1,350	16 2 Yr	80 10	18,0 2,
5.	Motor Vehicle Station Inspector	HS	22	80 8	1,760 176	24 4 Yr	120 20	2,6
6.	Driver Training Program Specialist	MS	4	40 4	160 16	40 4 Tri	67 7	26
7.	Driver Education Supervisor	MS	67	40	2,680	40 Tri	67	4,48
8.	Driver Education Teacher	BA	220	300 24	16,000 5,280	24 4 Yr	120 20	26,40 4,
9.	Driver Retraining Instructor	BA	36	380 32	13,680 1,152	24 4 Yr	120 20	4,32
10.	Driver License Examiner (incl. Motorcycle)	HS	169	80 8	13,520 1,352	24 4 Yr	120 20	20,28 3,
11.	Driver License Hearing Officer	HS	7	80	560	24 Yr	120	84
12.	Codes and Laws Program Specialist	Law Deg	1	40	40	---	---	---
13.	Traffic Court Judge	Law Deg	26	40	1,040	16 Yr	80	2,08
14.	Traffic Court Program Specialist	Law Deg	1	80	80	32 Tri	53	5
15.	Alcohol Technical Specialist	BA	4	80 12	320 48	24 4 Yr	120 20	48
16.	Breath Examiner Specialist	HS	38	40 8	1,520 304	16 4 Yr	80 20	3,04
17.	Accident Site Investigator	MS	33	120	3,960	40 Tri	67	2,21
18.	Accident Site Investigator Aide	HS	22	120	2,640	24 Yr	120	2,64
19.	Traffic Record Program Analyst	BA	2	80	160	40 Tri	67	13
20.	Traffic Records Systems Analyst	BA	1	40	40	40 Tri	67	6
21.	Emergency Medical Services Program Specialist	MS	1	80	80	40 Tri	67	6
22.	Emergency Medical Services Field Representative	BA	4	80	320	24 Yr	120	48
23.	Highway Engineer--Safety	BA	23	40	920	24 Yr	120	2,76
24.	Engineering Aide--Safety	HS	15	120	1,800	24 Yr	120	1,80
25.	Highway Safety Site Officer	HS	11	40	440	24 Yr	120	1,32
26.	Traffic Engineer	MS	17	40 8	680 136	24 4 Yr	120 20	2,04
27.	Engineering Aide--Traffic	HS	10	120 16	1,200 160	24 4 Yr	120 20	1,20
28.	Traffic Control Service Technician	HS	14	40 20	560 280	24 8 Yr	120 40	1,68
29.	Pedestrian Safety Program Specialist	MS	1	40	40	40 Tri	67	6
30.	Police Traffic Services Program Specialist	Jr. Col.	2	80	160	40 Tri	67	13
31.	Police Traffic Services Officer	Jr. Col.	32	80	2,560	20 Yr	100	3,20
32.	Police Traffic Services Patrolman	HS	1,040	140 20	145,600 20,800	20 4 Yr	100 20	104,00 20
33.	State Wrecker Operator	HS	77	40 4	3,080 308	16 2 Yr	80 10	6,16
34.	State Wrecker Field Representative	BA	1	80 8	80 8	24 4 Yr	120 20	12
35.	School Bus Program Specialist	BA	1	80	80	40 Tri	67	6
36.	School Bus Driver Training Officer	BA	1	40 8	40 8	40 4 Tri	67 20	6

32|33.

Highway Safety Manpower Development and Research Center

TRAINING OF STATE GOVERNMENT SAFETY SPECIALIST TRAINEES

ments exceed 100, operating personnel are trained in field)

alist Trainees				Center Professorial Requirements--Full-time Man Years/Year							
s. sher ning r idual 1973	Total Hrs. Refresher Training 1969-1973	TOTAL Training Hrs. 1969-1973	Place of Training & No. of Field Trainers	Law	Medicine	Public or Bus. Adm.	Education	Police Science	Engr.	Psych.	Total No. of Center Professors
10	40	80	Center			.0020					.002
67	134	454	Center			.0077		.0016	.0017		.011
67	67	107	Center			.0030					.003
0 10	18,000 2,250	27,000 3,600	Field (1)								
0 20	2,640 440	4,400 616	Center			.0246	.0410		.0984		.164
7 7	268 28	428 44	Center			.0045	.0105				.015
67	4,489	7,169	Center			.0540	.1260				.180
0 20	26,400 4,400	92,400 9,680	Field (2)								
0 20	4,320 720	18,000 1,872	Center				.3185		.1593	.1592	.637
0 20	20,280 3,380	33,800 4,732	Field (1)								
20	840	1,400	Center	.0140			.0105			.0105	.035
-	---	40	Center	.0008		.0002					.001
80	2,080	3,120	Center	.0585		.0195					.078
53	53	133	Center	.0013		.0017					.003
0 20	480 80	800 128	Center		.0160	.0064		.0096			.032
0 20	3,040 760	4,560 1,064	Center	.0550		.1100		.0550			.220
7	2,211	6,171	Center			.0077		.0385	.1078		.154
0	2,640	5,280	Center			.0330		.0132	.0858		.132
7	134	294	Center			.0010	.0014		.0032	.0014	.007
7	67	107	Center			.0030					.003
7	67	147	Center		.0028	.0012					.004
0	480	800	Center		.0140	.0060					.020
0	2,760	3,680	Center			.0230			.0690		.092
0	1,800	3,600	Center			.0297			.0603		.090
0	1,320	1,760	Center			.0110			.0330		.044
0 20	2,040 340	2,720 476	Center			.0145			.0435		.058
0 20	1,200 200	2,400 360	Center			.0038			.0442		.048
0 40	1,680 560	2,240 840	Center			.0175			.0525		.070
7	67	107	Center			.0008	.0022				.003
7	134	294	Center			.0008	.0032	.0030			.007
0	3,200	5,760	Center			.0907		.0533			.144
0 20	104,000 20,800	249,600 41,600	Field (4)								
0 10	6,160 770	9,240 1,078	Center		.1690	.1115	.0575				.338
0 20	120 20	200 28	Center		.0007	.0015	.0009		.0009		.004
7	67	147	Center			.0020	.0020				.004
7 20	67 20	107 28	Center				.0042			.0018	.006

			Field Tr			
Generalized Job Title	Entering Education*	1973 Estimated Number of Field Trainers	Hrs. Entry Training Per Individual	Total Hrs. Entry Training	Hrs. Refresher Training Per Individual	Hr Refre Trai Pe Indiv 1969-
4. Motor Vehicle Inspector (incl. Motorcycles)	HS	1	80/12	80/12	32/4 Yr	16
8. Driver Education Teacher	BA	2	600/48	1,200/96	48/8 Yr	24
10. Driver License Examiner (incl. Motorcycles)	HS	1	160/16	160/16	48/8 Yr	24
32. Police Traffic Services Patrolman	HS	4	280/40	1,120/160	40/8 Yr	20

Source for Entering Education, Estimated Manpower Requirements, Hours of Entry Training and Hours of Refresher Training: Booz, Allen & Hamilton's report to NHSB, Safety Specialist Manpower, Manpower Requirements, Vol. I, Appendix B, August 15, 1968.

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* HS = High School, BA = BA or BS Degree, MS = MS or MA Degree

Note: Where the number of hours in training are shown as two figures (example 50/10), the first figure represents the total number of training hours and the second represents the portion of those hours devoted to laboratory training.

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rainers				Center Professorial Requirements--Full-time Man Years/Years							
rs. resher ining Per vidual -1973	Total Hrs. Refresher Training 1969-1973	TOTAL Training Hrs. 1969-1973	Place of Training	Law	Medicine	Public or Bus. Adm.	Education	Police Science	Engr.	Psych.	Total No. of Center Professors
60 20	160 20	240 32	Center						.0090		.009
40 40	480 80	1,680 176	Center				.0420			.0180	.060
40 40	240 40	400 56	Center			.0024				.0136	.016
00 40	800 160	1,920 320	Center	.0112	.0056		.0288	.0344			.080
	Total Professorial Requirements:			.1408	.2081	.5947	.6487	.2086	.7686	.2045	2.774
itute 1 -	Prof. Requirements without Motor Vehicle Inspector (No. 4):			.1408	.2081	.5947	.6487	.2086	.7596	.2045	2.765
itute 2 -	Prof. Requirements without Driver Training (Nos. 6, 7, and 8) and Police Training(Nos. 30, 31, and 32) and School Bus Training (Nos. 35 and 36) and Motor Vehicle Inspector (No. 4):			.1296	.2025	.4427	.4320	.1179	.7596	.1847	2.269

Typical Medium State (Alabama) Highway Safe

PROFESSORIAL REQUIREMENTS FOR TRAINING OF S

(When Estimated Manpower Requirements exceed

	Generalized Job Title	Entering Education*	1978 Estimated Manpower Requirements	Safety Specialist Trainees Hrs. Entry Training Per Individual	Total Hrs. Entry Training	Hrs. Refresher Training Per Individual	Hrs. Refresher Training Per Individual 1969-1978	Tot Hrs Refre Train 1969-
1.	Governor's Highway Safety Program Director	BA	1	40	40	24 Tri	80	8
2.	Highway Safety Program Analyst	BA	2	160	320	40 Tri	134	26
3.	Highway Safety Public Information Officer	BA	1	40	40	40 Tri	134	13
4.	Motor Vehicle Inspector (incl. Motorcycles)	HS	272	40 6	10,880 1,632	16 2 Yr	160 20	43,520 5
5.	Motor Vehicle Station Inspector	HS	27	80 8	2,160 216	24 4 Yr	240 40	6,480 1
6.	Driver Training Program Specialist	MS	4	40 4	160 16	40 4 Tri	134 14	536 5
7.	Driver Education Supervisor	MS	67	40	2,680	40 Tri	134	8,97
8.	Driver Education Teacher	BA	290	300 24	87,000 6,960	24 4 Yr	240 40	69,600 11
9.	Driver Retraining Instructor	BA	45	380 32	17,100 1,440	24 4 Yr	240 40	10,800 1
10.	Driver License Examiner (incl. Motorcycle)	HS	207	80 8	16,560 1,656	24 4 Yr	240 40	49,680 8
11.	Driver License Hearing Officer	HS	9	80	720	24 Yr	240	2,16
12.	Codes and Laws Program Specialist	Law Deg	1	40	40	---	---	---
13.	Traffic Court Judge	Law Deg	28	40	1,120	16 Yr	160	4,48
14.	Traffic Court Program Specialist	Law Deg	1	80	80	32 Tri	106	106
15.	Alcohol Technical Specialist	BA	4	80 12	320 48	24 4 Yr	240 40	960 16
16.	Breath Examiner Specialist	HS	40	40 8	1,600 320	16 4 Yr	160 40	6,400 1,
17.	Accident Site Investigator	MS	34	120	4,080	40 Tri	134	4,556
18.	Accident Site Investigator Aide	HS	22	120	2,640	24 Yr	240	5,280
19.	Traffic Record Program Analyst	BA	2	80	160	40 Tri	134	268
20.	Traffic Records Systems Analyst	BA	1	40	40	40 Tri	134	134
21.	Emergency Medical Services Program Specialist	MS	1	80	80	40 Tri	134	134
22.	Emergency Medical Services Field Representative	BA	4	80	320	24 Yr	240	960
23.	Highway Engineer--Safety	BA	24	40	960	24 Yr	240	5,760
24.	Engineering Aide--Safety	HS	16	120	1,920	24 Yr	240	3,840
25.	Highway Safety Site Officer	HS	11	40	440	24 Yr	240	2,640
26.	Traffic Engineer	MS	17	40 8	680 136	24 4 Yr	240 40	4,080 68
27.	Engineering Aide--Traffic	HS	11	120 16	1,320 176	24 4 Yr	240 40	2,640 4
28.	Traffic Control Service Technician	HS	15	40 20	600 300	24 8 Yr	240 80	3,600 1,2
29.	Pedestrian Safety Program Specialist	MS	1	40	40	40 Tri	134	134
30.	Police Traffic Services Program Specialist	Jr. Col.	2	80	160	40 Tri	134	268
31.	Police Traffic Services Officer	Jr. Col.	33	80	2,640	20 Yr	200	6,600
32.	Police Traffic Services Patrolman	HS	1,075	140 20	150,500 1,500	20 4 Yr	200 40	215,000 43,
33.	State Wrecker Operator	HS	82	40 4	3,280 328	16 2 Yr	160 20	13,120 1,
34.	State Wrecker Field Representative	BA	1	80 8	80 8	24 4 Yr	240 40	240 40
35.	School Bus Program Specialist	BA	1	80	80	40 Tri	134	134
36.	School Bus Driver Training Officer	BA	1	40 8	40 8	40 4 Tri	134 40	134 40

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(Alabama) Highway Safety Manpower Development and Research Center

ENTS FOR TRAINING OF STATE GOVERNMENT SAFETY SPECIALIST TRAINEES

r Requirements exceed 100, operating personnel are trained in field)

y Specialist Trainees				Center Professorial Requirements--Full-time Man Years/Year							
Hrs. Refresher Training Per Individual 1969-1978	Total Hrs. Refresher Training 1969-1978	TOTAL Training Hrs. 1969-1978	Place of Training & No. of Field Trainers	Law	Medicine	Public or Bus. Adm.	Education	Police Science	Engr.	Psych.	Total No. of Center Professors
80	80	120	Center			.0020					.002
134	268	588	Center			.0049		.0011	.0010		.007
134	134	174	Center			.0020					.002
160 20	43,520 5,440	54,400 7,072	Field (1)								
240 40	6,480 1,080	8,640 1,296	Center			.0260	.0432		.1038		.173
134 14	536 56	696 72	Center			.0036	.0084				.012
134	8,978	11,658	Center			.0438	.1022				.146
240 40	69,600 11,600	156,600 18,560	Field (2)								
240 40	10,800 1,800	27,900 3,240	Center				.2555		.1278	.1277	.511
240 40	49,680 8,280	66,240 9,936	Field (1)								
240	2,160	2,880	Center	.0144			.0108			.0108	.036
---	---	40	Center	.0007		.0003					.001
160	4,480	5,600	Center	.0525		.0175					.070
106	106	186	Center	.0009		.0011					.002
240 40	960 160	1,280 208	Center		.0130	.0052		.0078			.026
160 40	6,400 1,600	8,000 1,920	Center	.0490		.0980		.0490			.196
134	4,556	8,636	Center			.0054		.0270	.0756		.108
240	5,280	7,920	Center			.0248		.0099	.0643		.099
134	268	428	Center			.0008	.0010		.0022	.0010	.005
134	134	174	Center			.0020					.002
134	134	214	Center		.0021	.0009					.003
240	960	1,280	Center		.0112	.0048					.016
240	5,760	6,720	Center			.0210			.0630		.084
240	3,840	5,760	Center			.0238			.0482		.072
240	2,640	3,080	Center			.0098			.0292		.039
240 40	4,080 680	4,760 816	Center			.0250			.0750		.100
240 40	2,640 440	3,960 616	Center			.0064			.0736		.080
240 80	3,600 1,200	4,200 1,500	Center			.0320			.0960		.128
134	134	174	Center			.0005	.0015				.002
134	268	428	Center			.0006	.0022	.0022			.005
200	6,600	9,240	Center			.0731		.0429			.116
200 40	215,000 43,000	365,500 44,500	Field (3)								
160 20	13,120 1,640	16,400 1,968	Center		.1515	.1000	.0515				.303
240 40	240 40	320 48	Center		.0010	.0024	.0013		.0013		.006
134	134	214	Center			.0015	.0015				.003
134 40	134 40	174 48	Center				.0035			.0015	.005

				Field T			
Generalized Job Title	Entering Education*	1978 Estimated Number of Field Trainers	Hrs. Entry Training Per Individual	Total Hrs. Entry Training	Hrs. Refresher Training Per Individual	H Refr Tra P Indi 1969
4. Motor Vehicle Inspector (incl. Motorcycles)	HS	1	80 12	80 12	32 4 Yr	3
8. Driver Education Teacher	BA	2	600 48	1200 96	48 8 Yr	4
10. Driver License Examiner (incl. Motorcycles)	HS	1	160 16	160 16	48 8 Yr	4
32. Police Traffic Services Patrolman	HS	3	280 40	840 120	40 8 Yr	4

Source for Entering Education, Estimated Manpower Requirements, Hours of Entry Training and Hours of Refresher Training: Booz, Allen & Hamilton's report to NHSB, Safety Specialist Manpower, Manpower Requirements, Vol. I, Appendix B, August 15, 1968.

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* HS = High School, BA = BA or BS Degree, MS = MS or MA Degree

Note: Where the number of hours in training are shown as two figures (example - 50/10), the first figure represents the total number of training hours and the second represents the portion of those hours devoted to laboratory training.

	Field Trainers							Center Professorial Requirements--Full-time Man Years/Year							
ntry ing dual	Total Hrs. Entry Training	Hrs. Refresher Training Per Individual	Hrs. Refresher Training Per Individual 1969-1978	Total Hrs. Refresher Training 1969-1978	TOTAL Training Hrs. 1969-1978	Place of Training	Law	Medicine	Public or Bus. Adm.	Education	Police Science	Engr.	Psych.	Total No. of Center Professors
	80/12	32/4 Yr	320/40	320/40	400/52	Center						.0080		.008
	1200/96	48/8 Yr	480/80	960/160	2160/256	Center				.0280			.0120	.040
	160/16	48/8 Yr	480/80	480/80	640/96	Center			.0020				.0110	.013
	840/120	40/8 Yr	400/80	1200/240	2040/360	Center	.0062	.0031		.0158	.0189			.044
				Total Professorial Requirements:			.1237	.1819	.5412	.5264	.1588	.7690	.1640	2.465
		Substitute 1 -	Prof. Requirements without Motor Vehicle Inspector (No. 4):				.1237	.1819	.5412	.5264	.1588	.7610	.1640	2.457
		Substitute 2 -	Prof. Requirements without Driver Training (Nos. 6, 7, and 8) and Police Training (Nos. 30, 31, and 32) and School Bus Training (Nos. 35 and 36) and Motor Vehicle Inspector (No. 4):				.1175	.1788	.4186	.3648	.0948	.7610	.1505	2.086

of Entry Training
HSB, *Safety*
15, 1968.

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Typical Small State (Idaho) Highway Safe

PROFESSORIAL REQUIREMENTS FOR TRAINING OF

(When Estimated Manpower Requirements excee

	Generalized Job Title	Entering Education*	1973 Estimated Manpower Requirements	Safety Specialist Tra Hrs. Entry Training Per Individual	Total Hrs. Entry Training	Hrs. Refresher Training Per Individual	Hrs. Refresher Training Per Individual 1969-1973
1.	Governor's Highway Safety Program Director	BA	1	40	40	24 Tri	40
2.	Highway Safety Program Analyst	BA	1	160	160	40 Tri	67
3.	Highway Safety Public Information Officer	BA	---	40	---	40 Tri	67
4.	Motor Vehicle Inspector (incl. Motorcycles)	HS	60	40 6	2,400 360	16 2 Yr	80 10
5.	Motor Vehicle Station Inspector	HS	5	80 8	400 40	24 4 Yr	120 20
6.	Driver Training Program Specialist	MS	4	40 4	160 16	40 4 Tri	67 7
7.	Driver Education Supervisor	MS	44	40	1,760	40 Tri	67
8.	Driver Education Teacher	BA	56	300 24	16,800 1,344	24 4 Yr	120 20
9.	Driver Retraining Instructor	BA	9	380 32	3,420 288	24 4 Yr	120 20
10.	Driver License Examiner (incl. Motorcycle)	HS	21	80 8	1,680 168	24 4 Yr	120 20
11.	Driver License Hearing Officer	HS	2	80	160	24 Yr	120
12.	Codes and Laws Program Specialist	Law Deg	1	40	40	---	---
13.	Traffic Court Judge	Law Deg	5	40	200	16 Yr	80
14.	Traffic Court Program Specialist	Law Deg	1	80	80	32 Tri	53
15.	Alcohol Technical Specialist	BA	2	80 12	160 24	24 4 Yr	120 20
16.	Breath Examiner Specialist	HS	7	40 8	280 56	16 4 Yr	80 20
17.	Accident Site Investigator	MS	23	120	2,760	40 Tri	67
18.	Accident Site Investigator Aide	HS	17	120	2,040	24 Yr	120
19.	Traffic Record Program Analyst	BA	2	80	160	40 Tri	67
20.	Traffic Records Systems Analyst	BA	1	40	40	40 Tri	67
21.	Emergency Medical Services Program Specialist	MS	1	80	80	40 Tri	67
22.	Emergency Medical Services Field Representative	BA	1	80	80	24 Yr	120
23.	Highway Engineer--Safety	BA	17	40	680	24 Yr	120
24.	Engineering Aide--Safety	HS	11	120	1,320	24 Yr	120
25.	Highway Safety Site Officer	HS	9	40	360	24 Yr	120
26.	Traffic Engineer	MS	11	40 8	440 88	24 4 Yr	120 20
27.	Engineering Aide--Traffic	HS	7	120 16	840 112	24 4 Yr	120 20
28.	Traffic Control Service Technician	HS	3	40 20	120 60	24 8 Yr	120 40
29.	Pedestrain Safety Program Specialist	MS	1	40	40	40 Tri	67
30.	Police Traffic Services Program Specialist	Jr. Col.	2	80	160	40 Tri	67
31.	Police Traffic Services Officer	Jr. Col.	4	80	320	20 Yr	100
32.	Police Traffic Services Patrolman	HS	144	140 20	20,160 2,880	20 4 Yr	100 20
33.	State Wrecker Operator	HS	14	40 4	560 56	16 2 Yr	80 10
34.	State Wrecker Field Representative	BA	---	80 8	---	24 4 Yr	120 20
35.	School Bus Program Specialist	BA	1	80	80	40 Tri	67
36.	School Bus Driver Training Officer	BA	1	40 8	40 8	40 4 Tri	67 20

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e (Idaho) Highway Safety Manpower Development and Research Center

Five Year Program

Appendix 1-10

EMENTS FOR TRAINING OF STATE GOVERNMENT SAFETY SPECIALIST TRAINEES

wer Requirements exceed 100, operating personnel are trained in field)

Safety Specialist Trainees					Center Professorial Requirements--Fulltime Man Years/Year							
rs. esher ining er vidual	Hrs. Refresher Training Per Individual 1969-1973	Total Hrs. Refresher Training 1969-1973	TOTAL Training Hrs. 1969-1973	Place of Training & No. of Field Trainers	Law	Medicine	Public or Bus. Adm	Education	Police Science	Engr.	Psych.	Total No. of Center Professors
Tri	40	40	80	Center			.0020					.002
Tri	67	67	227	Center			.0042		.0009	.0009		.006
Tri	67	---	---	Center								---
Yr	80 10	4,800 600	7,200 960	Center						.2760		.276
Yr	120 20	600 100	1,000 140	Center			.0059	.0097		.0234		.039
Tri	67 7	268 28	428 44	Center			.0045	.0105				.015
Tri	67	2,948	4,708	Center			.0351	.0819				.117
Yr	120 20	6,720 224	23,520 1,568	Center				.5215			.2235	.745
Yr	120 20	1,080 180	4,500 468	Center				.0795		.0398	.0397	.159
Yr	120 20	2,520 420	4,200 588	Center			.0246				.1394	.164
Yr	120	240	400	Center	.0040			.0030			.0030	.010
---	---	---	40	Center	.0007		.0008					.001
Yr	80	400	600	Center	.0112		.0038					.015
Tri	53	53	133	Center	.0145		.0185					.033
Yr	120 20	240 40	400 64	Center		.0880	.0352		.0528			.176
Yr	80 20	560 140	840 196	Center	.0103		.0205		.0102			.041
Tri	67	1,541	4,301	Center			.0054		.0270	.0756		.108
Yr	120	2,040	4,080	Center			.0255		.0102	.0663		.102
Tri	67	134	294	Center			.0010	.0014		.0032	.0014	.007
Tri	67	67	107	Center			.0030					.003
Tri	67	67	147	Center		.0028	.0012					.004
Yr	120	120	200	Center		.0035	.0015					.005
Yr	120	2,040	2,720	Center			.0170			.0510		.068
Yr	120	1,320	2,640	Center			.0218			.0442		.066
Yr	120	1,080	1,440	Center			.0090			.0270		.036
Yr	120 20	1,320 220	1,760 308	Center			.0188			.0562		.075
Yr	120 20	840 140	1,680 252	Center			.0054			.0616		.067
Yr	120 40	360 120	480 180	Center			.0075			.0225		.030
Tri	67	67	107	Center			.0008	.0022				.003
Tri	67	840	1,000	Center			.0030	.0112	.0108			.025
Yr	100	400	720	Center			.0113		.0067			.018
Yr	100 20	14,000 2,880	34,160 5,760	Field (1)								
Yr	80 10	1,120 140	1,680 196	Center		.0305	.0201	.0104				.061
Yr	120 20	---	---	---								---
Tri	67	67	147	Center			.0020	.0020				.004
Tri	67 20	67 20	107 28	Center				.0035			.0015	.005

			Field Trainers			
Generalized Job Title	Entering Education*	1973 Estimated Number of Field Trainers	Hrs. Entry Training Per Individual	Total Hrs. Entry Training	Hrs. Refresher Training Per Individual	Hrs. Refresher Training Per Individual 1969-1973
32. Police Traffic Services Patrolman	HS	1	280/40	280/40	40/8 Yr	200/40

Source for Entering Education, Estimated Manpower Requirements, Hours of Entry Training and Hours of Refresher Training: Booz, Allen & Hamilton's report to NHSB, Safety Specialist Manpower, Manpower Requirements, Vol. I, Appendix B, August 15, 1968.

* HS = High School, BA = BA or BS Degree, MS = MS or MA Degree

Note: Where the number of hours in training are shown as two figures (example - 50/10), the first figure represents the total number of training hours and the second represents the portion of those hours devoted to laboratory training.

Substitute 1 -

Substitute 2 -

rainers				Center Professorial Requirements--Full-time Man Years/Year							
rs. esher ining er vidual -1973	Total Hrs. Refresher Training 1969-1973	TOTAL Training Hrs. 1969-1973	Place of Training	Law	Medicine	Public or Bus. Adm.	Education	Police Science	Engr.	Psych.	Total No. of Center Professors
00 / 40	200 / 40	480 / 80	Center	.0028	.0014		.0072	.0086			.020
	Total Professorial Requirements:			.0435	.1262	.3089	.7440	.1272	.7477	.4085	2.506
tute 1 -	Prof. Requirements without			.0435	.1262	.3089	.7440	.1272	.4717	.4085	2.230
	Motor Vehicle Inspector (No. 4):			.0435	.1262	.3089	.7440	.1272	.4717	.4085	2.230
tute 2 -	Prof. Requirements without Driver Training (Nos. 6, 7, and 8) and Police Training (Nos. 30, 31, and 32) and School Bus Training (Nos. 35 and 36) and Motor Vehicle Inspector (No. 4):			.0407	.1248	.2530	.1062	.1011	.4717	.1835	1.281

Typical Small State (Idaho) Hi

PROFESSORIAL REQUIREMENTS FOR T

(When Estimated Manpower Requireme

			Safety Specialist			
Generalized Job Title	Entering Education*	1978 Estimated Manpower Requirements	Hrs. Entry Training Per Individual	Total Hrs. Entry Training	Hrs. Refresher Training Per Individual	Hrs. Refresher Training Per Individual 1969-1978
1. Governor's Highway Safety Program Director	BA	1	40	40	24 Tri	80
2. Highway Safety Program Analyst	BA	1	160	160	40 Tri	134
3. Highway Safety Public Information Officer	BA	---	40	---	40 Tri	134
4. Motor Vehicle Inspector (incl. Motorcycles)	HS	67	40 6	2,680 402	16 2 Yr	160 20
5. Motor Vehicle Station Inspector	HS	5	80 8	400 40	24 4 Yr	240 40
6. Driver Training Program Specialist	MS	4	40 4	160 16	40 4 Tri	134 14
7. Driver Education Supervisor	MS	44	40	1,760	40 Tri	134
8. Driver Education Teacher	BA	75	300 24	22,500 1,800	24 4 Yr	240 40
9. Driver Retraining Instructor	BA	10	380 32	3,800 320	24 4 Yr	240 40
10. Driver License Examiner (incl. Motorcycle)	HS	15	80 8	1,200 120	24 4 Yr	240 40
11. Driver License Hearing Officer	HS	2	80	160	24 Yr	240
12. Codes and Laws Program Specialist	Law Deg	1	40	40		
13. Traffic Court Judge	Law Deg	5	40	200	16 Yr	160
14. Traffic Court Program Specialist	Law Deg	1	80	80	32 Tri	106
15. Alcohol Technical Specialist	BA	2	80 12	160 24	24 4 Yr	240 40
16. Breath Examiner Specialist	HS	7	40 8	280 56	16 4 Yr	160 40
17. Accident Site Investigator	MS	24	120	2,880	40 Tri	134
18. Accident Site Investigator Aide	HS	17	120	2,040	24 Yr	240
19. Traffic Record Program Analyst	BA	2	80	160	40 Tri	134
20. Traffic Records Systems Analyst	BA	1	40	40	40 Tri	134
21. Emergency Medical Services Program Specialist	MS	1	80	80	40 Tri	134
22. Emergency Medical Services Field Representative	BA	1	80	80	24 Yr	240
23. Highway Engineer--Safety	BA	18	40	720	24 Yr	240
24. Engineering Aide--Safety	HS	12	120	1,440	24 Yr	240
25. Highway Safety Site Officer	HS	9	40	360	24 Yr	240
26. Traffic Engineer	MS	12	40 8	480 96	24 4 Yr	240 40
27. Engineering Aide--Traffic	HS	7	120 16	840 112	24 4 Yr	240 40
28. Traffic Control Service Technician	HS	3	40 20	120 60	24 8 Yr	240 80
29. Pedestrain Safety Program Specialist	MS	1	40	40	40 Tri	134
30. Police Traffic Services Program Specialist	Jr. Col.	2	80	160	40 Tri	134
31. Police Traffic Services Officer	Jr. Col.	4	80	320	20 Yr	200
32. Police Traffic Services Patrolman	HS	150	140 20	21,000 3,000	20 4 Yr	200 40
33. State Wrecker Operator	HS	15	40 4	600 60	16 2 Yr	160 20
34. State Wrecker Field Representative	BA	---	80 8	---	24 4 Yr	240 40
35. School Bus Program Specialist	BA	1	80	80	40 Tri	134
36. School Bus Driver Training Officer	BA	1	40 8	40 8	40 4 Tri	134 40

Highway Safety Manpower Development and Research Center

Ten Year Program

Appendix 1-11

TRAINING OF STATE GOVERNMENT SAFETY SPECIALIST TRAINEES

ements exceed 100, operating personnel are trained in field)

st Trainees			Center Professorial Requirements--Full-time Man Years Year							
Total Hrs. Refresher Training 1969-1978	TOTAL Training Hrs. 1969-1978	Place of Training & No. of Field Trainers	Law	Medicine	Public or Bus. Adm.	Education	Police Science	Engr.	Psych.	Total No. of Center Professors
80	120	Center			.0020					.002
134	294	Center			.0028		.0006	.0006		.004
---	---	Center								---
10,720 1,340	13,400 1,742	Center						.2550		.255
1,200 200	1,600 240	Center			.0048	.0080		.0192		.032
536 56	696 72	Center			.0036	.0084				.012
5,896	7,656	Center			.0288	.0672				.096
18,000 3,000	40,500 4,800	Center				.5222			.2238	.746
2,400 400	6,200 720	Center				.0570		.0285	.0285	.114
3,600 600	4,800 720	Center			.0144				.0816	.096
480	640	Center	.0032			.0024			.0024	.008
	40	Center	.0007		.0003					.001
800	1,000	Center	.0097		.0033					.013
106	186	Center	.0009		.0011					.002
480 80	640 104	Center		.0065	.0026		.0039			.013
1,120 280	1,400 336	Center	.0085		.0170		.0085			.034
3,216	6,096	Center			.0038		.0190	.0532		.076
4,080	6,120	Center			.0193		.0077	.0500		.077
268	428	Center			.0008	.0010		.0022	.0010	.005
134	174	Center			.0020					.002
134	214	Center		.0021	.0009					.003
240	320	Center		.0028	.0012					.004
4,320	5,040	Center			.0158			.0472		.063
2,880	4,320	Center			.0178			.0362		.054
2,160	2,520	Center			.0080			.0240		.032
2,880 480	3,360 576	Center			.0178			.0532		.071
1,680 280	2,520 392	Center			.0041			.0469		.051
720 240	840 300	Center			.0065			.0195		.026
134	174	Center			.0005	.0015				.002
268	428	Center			.0006	.0022	.0022			.005
800	1,120	Center			.0088		.0052			.014
30,000 6,000	51,000 9,000	Field (1)								
2,400 300	3,000 360	Center		.0280	.0185	.0095				.056
---	---	---								---
134	214	Center			.0015	.0015				.003
134 40	174 48	Center				.0035			.0015	.005

Generalized Job Title	Entering Education*	1978 Estimated Number of Field Trainers	Field Trainers			
			Hrs. Entry Training Per Individual	Total Hrs. Entry Training	Hrs. Refresher Training Per Individual	Hrs. Refresher Training Per Individual 1969-1978
32. Police Traffic Services Patrolman	HS	1	280/40	280/40	40/8 Yr	400/80

Source for Entering Education, Estimated Manpower Requirements, Hours of Entry Training and Hours of Refresher Training: Safety Specialists Manpower Report, Supplement--Letter Report of October 14, 1968.

* HS = High School, BA = BA or BS Degree, MS = MS or MA Degree

Note: Where the number of hours in training are shown as two figures (example-50/10), the first figure represents the total number of training hours and the second represents the portion of those hours devoted to laboratory training.

Substitute 1 -

Substitute 2 -

ield Trainers				Center Professorial Requirements--Fulltime Man Years/Years							
Hrs. Refresher Training Per Individual 1969-1978	Total Hrs. Refresher Training 1969-1978	TOTAL Training Hrs. 1969-1978	Place of Training	Law	Medicine	Public or Bus. Adm.	Education	Police Science	Engr.	Psych.	Total No. of Center Professors
400/80	400/80	680/120	Center	.0021	.0011		.0054	.0064			.015
Total Professorial Requirements:				.0251	.0405	.2086	.6898	.0535	.6357	.3388	1.992
Substitute 1 - Prof. Requirements without Motor Vehicle Inspector (No. 4):				.0251	.0405	.2086	.6898	.0535	.3807	.3388	1.737
Substitute 2 - Prof. Requirements without Driver Training (Nos. 6, 7, and 8) and Police Training (Nos. 30, 31, and 32) and School Bus Training (Nos. 35 and 36) and Motor Vehicle Inspector (No. 4):				.0230	.0394	.1653	.0794	.0397	.3807	.1135	.841

Appendix 1-12

BOOZ · ALLEN & HAMILTON Inc.
Management Consultants

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October 14, 1968

Dr. William Tarrants
National Highway Safety Bureau
U.S. Department of Transportation
Washington, D. C. 20591

Dear Dr. Tarrants:

We are pleased to provide you with this letter estimating local government safety specialist manpower requirements. We would like to emphasize again our mutual understanding that the estimates provided herein are intended to present a general magnitude of local government safety manpower requirements rather than an estimate of such personnel presently assigned or a scientific calculation of specific local government needs.

Estimates are presented as a national aggregate by program for a single year--1968--and represent our judgment of "minimum requirements" as this term is used in our report to you on Safety Specialist Manpower (Contract FH 11-6496). Local governments are defined in Bureau of the Census nomenclature to include counties, municipalities, townships, school districts, and special districts.

Estimates are as follows for the indicated program:

Program	Estimated 1968 Local Government Safety Specialist Manpower Requirement
Planning and Administration	1,229
Codes and Laws	359
Traffic Courts	9,972
Alcohol in Relation to Highway Safety	18,545
Identification and Surveillance of Accident Locations	2,537
Traffic Records	1,078
Emergency Medical Services	37,510
Highway Design, Construction and Maintenance	2,398
Traffic Control Devices	1,808
Pedestrian Safety	359
Police Traffic Services	330,315
Accident Cleanup	33,759
School Bus Safety	271,621
	711,490

Two programs, Police Traffic Services and School Bus Safety, account for 84.6 percent of the total manpower requirement presented here. Three other programs, Alcohol in Relation to Highway Safety, Emergency Medical Services, and Accident Cleanup, account for an additional 12.6 percent. The remaining eight programs contribute 2.8 percent of the manpower requirement.

The same general methodology was used in developing estimates for ten of the programs. This methodology consisted of:

- Selecting from the Bureau of the Census functional categorization of government employment the functional category most related to each program
- Obtaining 1967 national employment in each functional category by state government and by local government (Source: Bureau of the Census, Public Employment in 1967, GE 67 No. 1)
- Calculating for each program the ratio between total 1968 Alternative 2 requirements developed in the Safety Specialist Manpower study and the 1968 state government employment in the related functional category
- Calculating the 1968 local government requirement necessary to yield a ratio of local 1968 safety specialists to 1967 local government employees in the related functional category equal to the above state requirement/employment ratio

Programs for which this methodology was used and the Bureau of the Census functional employment category selected as related to that program are given below:

Program	Functional Category
Planning and Administration	General Control
Codes and Laws	General Control
Traffic Courts	General Control
Alcohol in Relation to Highway Safety	Police Protection
Identification and Surveillance of Accident Locations	Highways
Traffic Records	General Control
Highway Design, Construction, and Maintenance	Highways
Traffic Control Devices	Highways
Pedestrian Safety	General Control
Police Traffic Services	Police Protection

It should be recognized that this methodology involves an assumption that the ratio of safety specialists to total employees in local government programs is the same as the corresponding ratio in state government programs. The latter ratio has been empirically derived in our (state) Safety Specialist Manpower study. While there is likely to be a similarity of ratios in the aggregate, significant ratio variations can be expected within particular programs. Consequently, the numbers derived by this methodology should be considered as magnitude estimates only.

Estimates for three programs were derived in a different manner:

- The School Bus Safety estimate is based upon one school bus driver per school bus plus one mechanic per 15 school buses. (Source of school bus data: Bureau of Public Roads, Highway Statistics, 1966)
- The Accident Cleanup estimate is based upon Alternative 2 of the Safety Specialist Manpower study. Alternative 2 assumes that state governments will provide 10% of the wrecker service; the estimate here assumes that local governments will supply the remaining 90%.
- The Emergency Medical Services estimate is based upon the assumption of one Emergency Medical Services Unit per 50,000 people, and 10 Emergency Medical Services personnel per unit.

Estimates are not made for five programs because local government participation in these programs is minimal, or relevant estimates are presented in the Safety Specialist Manpower report. These programs are:

- Periodic Motor Vehicle Inspection (Alternative 1 of the Safety Specialist Manpower report is relevant to local governments.)
- Motor Vehicle Registration
- Motorcycle Safety
- Driver Education (Covered in the Safety Specialist Manpower report)
- Driver Licensing

The estimates presented in this letter are first attempts to approximate the general magnitude of local government safety specialist requirements. Further efforts based on field work can be expected to yield more accurate results.

Very truly yours,

Edward F. R. Hearle

BOOZ, ALLEN & HAMILTON Inc.

Edward F. R. Hearle
Vice President

HIGHWAY SAFETY TRAINING NEEDS FOR LOCAL

(When Estimated Manpower Requirements

			Safety Specialist Traine					
Generalized Job Titles	Entering Education*	1973 Estimated Manpower Requirements	Hrs. Entry Training Per Individual	Total Hrs. Entry Training	Hrs. Refresher Training Per Individual	Hrs. Refresher Training Per Individual 1969-1973	To H Refr Tra 196
1. Planning and Administration	BA	1,370	40	54,800	10 Yr	50	6
2. Codes and Laws	Law Deg	400	40	16,000	—	—	
3. Traffic Courts	Law Deg	11,070	40	442,800	16 Yr	80	8
4. Alcohol in Relation to Highway Safety	BA 1,859 HS 18,791	20,650	50 10	1,032,500 206,500	16 4 Yr	80 20	1,6
5. Identification and Surveillance of Accident Locations	MS 1,664 HS 1,156	2,820	120	338,400	20 Yr	100	2
6. Traffic Records	BA	1,200	60	72,000	15 Yr	75	
7. Emergency Medical Services	MS 7,961 BA 33,939	41,900	80	3,352,000	10 Yr	50	2,0
8. Highway Design, Construction and Maintenance	BA 1,228 HS 1,442	2,670	80	213,600	24 Yr	120	3
9. Traffic Control Devices	MS 907 HS 1,108	2,015	80 16	161,200 32,240	24 4 Yr	120 20	2
10. Pedestrian Safety	MS	400	40	16,000	15 Yr	75	
11. Police Traffic Services	Jr. Col. 11,010 HS 255,990	367,000	140 20	51,380,000 7,340,000	20 4 Yr	100 20	36, 7
12. Accident Cleanup	BA 376 HS 37,224	37,600	80 8	3,008,000 300,800	16 2 Yr	80 10	3,
13. School Bus Safety	BA	303,000	40 8	12,120,000 2,424,000	16 2 Yr	80 10	24, 3,

			Field Trainers				
Generalized Job Title	Entering Education*	1973 Estimated Number of Field Trainers	Hrs. Entry Training Per Individual	Total Hrs. Entry Training	Hrs. Refresher Training Per Individual	Hrs. Refresher Training Per Individual 1969-1973	To H Refr Tra 1969
1. Planning and Administration	BA	1	80	80	20 Yr	100	
3. Traffic Courts	Law Deg	13	80	1,040	32 Yr	160	
4. Alcohol in Relation to Highway Safety	BA 1,859 HS 18,791	52	100 20	5,200 1,040	32 8 Yr	160 40	8
5. Identification and Surveillance of Accident Locations	MS 1,664 HS 1,156	6	240	1,440	40 Yr	200	
6. Traffic Records	BA	2	120	240	30 Yr	150	
7. Emergency Medical Services	MS 7,961 BA 33,939	55	160	8,800	20 Yr	100	
8. Highway Design, Construction and Maintenance	BA 1,228 HS 1,442	5	160	800	48 Yr	240	
9. Traffic Control Devices	MS 907 HS 1,108	7	160 32	1,120 224	48 8 Yr	240 40	1
11. Police Traffic Services	Jr. Col 11,010 HS 355,990	1,468	280 40	411,040 58,720	40 8 Yr	200 40	29 5
12. Accident Cleanup	BA 376 HS 37,224	87	160 16	13,920 1,392	32 4 Yr	160 20	13
13. School Bus Safety	BA	582	80 16	46,560 9,312	32 4 Yr	160 20	93 1

Source for Estimated Manpower Requirements: Safety Specialist Manpower Report, Supplement--Letter Report of October 14, 1968.

* HS = High School, BA = BA or BS Degree, MS = MS or MA Degree

Note: Where the number of hours in training are shown as two figures (example - 50/10), the first figure represents the total number of training hours and the second represents the portion of those hours devoted to laboratory training.

85/56

TRAINING NEEDS FOR LOCAL GOVERNMENT PERSONNEL - 1973 - SINGLE CENTER FOR NATION

d Manpower Requirements exceed 1,000, operating personnel are trained in field)

Five Year Program

Appendix 1-13

Safety Specialist Trainees

Hrs. resher aining Per ividual	Hrs. Refresher Training Per Individual 1969-1973	Total Hrs. Refresher Training 1969-1973	TOTAL Training Hrs. 1969-1973	Place of Training & No. of Field Trainers	Center Professorial Requirements--Full-time Man Years/Year							
					Law	Medicine	Public or Bus. Adm.	Education	Police Science	Engr.	Psych.	Total No. of Center Professors
10 Yr	50	68,500	123,300	Field (1)								
—	—	—	16,000	Center	.3000		.1000					.400
16 Yr	80	885,600	1,328,400	Field (13)								
16	80	1,652,000	2,684,500	Field (52)								
4 Yr	20	413,000	619,500									
20 Yr	100	282,000	620,400	Field (6)								
15 Yr	75	90,000	162,000	Field (2)								
10 Yr	50	2,095,000	5,447,000	Field (55)								
24 Yr	120	320,400	534,000	Field (5)								
24	120	241,800	403,000	Field (7)								
4 Yr	20	40,300	72,540									
15 Yr	75	30,000	46,000	Center			.2875	.8625				1.150
20	100	36,700,000	88,080,000	Field								
4 Yr	20	7,340,000	14,680,000	(1,468)								
16	80	3,008,000	6,016,000	Field (87)								
2 Yr	10	376,000	676,800									
16	80	24,240,000	36,360,000	Field (582)								
2 Yr	10	3,030,000	5,454,000									

Field Trainers

Hrs. resher aining Per ividual	Hrs. Refresher Training Per Individual 1969-1973	Total Hrs. Refresher Training 1969-1973	TOTAL Training Hrs. 1969-1973	Place of Training	Center Professorial Requirement--Full-time Man Years/Year							
					Law	Medicine	Public or Bus. Adm.	Education	Police Science	Engr.	Psych.	Total No. of Center Professors
20 Yr	100	100	180	Center			.0040		.0005	.0005		.005
32 Yr	160	2,080	3,120	Center	.0546		.0234					.078
32	160	8,320	13,520	Center	.1300	.0650	.2925		.1625			.650
8 Yr	40	2,080	3,120									
40 Yr	200	1,200	2,640	Center			.0099		.0099	.0462		.066
30 Yr	150	300	540	Center			.0056	.0021		.0042	.0021	.014
20 Yr	100	5,500	14,300	Center		.2506	.1074					.358
48 Yr	240	1,200	2,000	Center			.0125			.0375		.050
48	240	1,680	2,800	Center			.0242			.0968		.121
8 Yr	40	280	504									
40	200	293,600	704,640	Center	3.8168	1.7616	1.1744	10.2760	12.3312			29.360
8 Yr	40	58,720	117,440									
32	160	13,920	27,840	Center		.4843	.3330	.1715		.0202		1.009
4 Yr	20	1,740	3,132									
32	160	93,120	139,680	Center			.5587	3.6315			1.3968	5.587
4 Yr	20	11,640	20,952									
		Total Professorial Requirements:			4.3014	2.5615	2.9331	14.9436	12.5041	.2054	1.3989	38.848

HIGHWAY SAFETY TRAINING NEEDS FOR L

(When Estimated Manpower Requireme

Generalized Job Titles	Entering Education*	1978 Estimated Manpower Requirements	Safety Specialist Tr Hrs. Entry Training Per Individual	Total Hrs. Entry Training	Hrs. Refresher Training Per Individual	Hrs. Refresher Training Per Individual 1969-1978
1. Planning and Administration	BA	1,523	40	60,920	10 Yr	100
2. Codes and Laws	Law Deg	446	40	17,840	—	—
3. Traffic Courts	Law Deg	12,380	40	495,200	16 Yr	160
4. Alcohol in Relation to Highway Safety	BA 2,070 HS 20,930	23,000	50/10	1,150,000/230,000	16/4 Yr	160/40
5. Identification and Surveillance of Accident Locations	MS 1,858 HS 1,292	3,150	120	378,000	20 Yr	200
6. Traffic Records	BA	1,390	60	83,400	15 Yr	150
7. Emergency Medical Services	MS 8,854 BA 37,746	46,600	80	3,728,000	10 Yr	100
8. Highway Design, Construction and Maintenance	BA 1,366 HS 1,604	2,970	80	237,600	24 Yr	240
9. Traffic Control Devices	MS 1,013 HS 1,237	2,250	80/16	180,000/36,000	24/4 Yr	240/40
10. Pedestrian Safety	MS	446	40	17,840	15 Yr	150
11. Police Traffic Services	Jr. Col. 12,300 HS 397,700	410,000	140/20	57,400,000/8,200,000	20/4 Yr	200/40
12. Accident Cleanup	BA 419 HS 41,481	41,900	80/8	3,352,000/335,200	16/2 Yr	160/20
13. School Bus Safety	BA	338,000	40/8	13,520,000/2,704,000	16/2 Yr	160/20

Generalized Job Titles	Entering Education*	1978 Estimated Number of Field Trainers	Field Trainers Hrs. Entry Training Per Individual	Total Hrs. Entry Training	Hrs. Refresher Training Per Individual	Hrs. Refresher Training Per Individual 1969-1978
1. Planning and Administration	BA	1	80	80	20 Yr	200
3. Traffic Courts	Law Deg	12	80	960	32 Yr	320
4. Alcohol in Relation to Highway Safety	BA 2,070 HS 20,930	47	100/20	4,700/940	32/8 Yr	320/80
5. Identification and Surveillance of Accident Locations	MS 1,858 HS 1,292	5	240	1,200	40 Yr	400
6. Traffic Records	BA	2	120	240	30 Yr	300
7. Emergency Medical Services	MS 8,854 BA 37,746	42	160	6,720	20 Yr	200
8. Highway Design, Construction and Maintenance	BA 1,366 HS 1,604	5	160	800	48 Yr	480
9. Traffic Control Devices	MS 1,013 HS 1,237	6	160/32	960/192	48/8 Yr	480/80
11. Police Traffic Services	Jr. Col. 12,300 HS 397,700	1,189	280/40	332,920/47,560	40/8 Yr	400/80
12. Accident Cleanup	BA 419 HS 41,481	74	160/16	11,840/1,184	32/4 Yr	320/40
13. School Bus Safety	BA	527	80/16	42,160/8,432	32/4 Yr	320/40

Source for Estimated Manpower Requirements: Safety Specialist Manpower Report, Supplement--Letter Report of October 14, 1968.

* HS = High School, BA = BA or BS Degree, MS = MS or MA Degree

Note: Where the number of hours in training are shown as two figures (example - 50/10), the first figure represents the total number of training hours and the second represents the portion of those hours devoted to laboratory training.

57/58

NEEDS FOR LOCAL GOVERNMENT PERSONNEL - 1978 - SINGLE CENTER FOR NATION

er Requirements exceed 1,000, operating personnel are trained in field)

Ten Year Program

Appendix 1-14

pecialist Trainees

Hrs. Refresher Training Per Individual 1969-1978	Total Hrs. Refresher Training 1969-1978	TOTAL Training Hrs. 1969-1978	Place of Training & No. of Field Trainers	Center Professorial Requirements--Full-time Man Years/Year: Law	Medicine	Public or Bus. Adm	Education	Police Science	Engr.	Psych.	Total No. of Center Professors
100	152,300	213,220	Field (1)								
—	—	17,840	Center	.1672		.0558					.223
160	1,980,800	2,476,000	Field (12)								
160 40	3,680,000 920,000	4,830,000 1,150,000	Field (47)								
200	630,000	1,008,000	Field (5)								
150	208,500	291,900	Field (2)								
100	4,660,000	8,388,000	Field (42)								
240	712,800	950,400	Field (5)								
240 40	540,000 90,000	720,000 126,000	Field (6)								
150	66,900	84,740	Center			.2648	.7942				1.059
200 40	82,000,000 16,400,000	139,400,000 24,600,000	Field (1,189)								
160 20	6,704,000 838,000	10,056,000 1,173,200	Field (74)								
160 20	54,080,000 6,760,000	67,600,000 9,464,000	Field (527)								

ield Trainers

Hrs. Refresher Training Per Individual 1969-1978	Total Hrs. Refresher Training 1969-1978	TOTAL Training Hrs. 1969-1978	Place of Training	Center Professorial Requirements--Full-time Man Years/Year: Law	Medicine	Public or Bus. Adm.	Education	Police Science	Engr.	Psych.	Total No. of Center Professors
200	200	280	Center			.0032		.0004	.0004		.004
320	3,840	4,800	Center	.0420		.0180					.060
320 80	15,040 3,760	19,740 4,700	Center	.0964	.0482	.2169		.1205			.482
400	2,000	3,200	Center			.0060		.0060	.0280		.040
300	600	840	Center			.0044	.0016		.0033	.0017	.011
200	8,400	15,120	Center		.1323	.0567					.189
480	2,400	3,200	Center			.0100			.0300		.040
480 80	2,880 480	3,840 672	Center			.0164			.0656		.082
400 80	475,600 95,120	808,520 142,680	Center	2.2413	1.0345	.6896	6.0344	7.2412			17.241
320 40	23,680 2,960	35,520 4,144	Center		.3125	.2148	.1107		.0130		.651
320 40	168,640 21,080	210,800 29,512	Center			.4111	2.6721			1.0278	4.111
	Total Professorial Requirements:			2.5469	1.5275	1.9677	9.6130	7.3681	.1403	1.0295	24.193

Appendix 1-15

NATIONAL HIGHWAY SAFETY BUREAU FEDERAL SAFETY ADMINISTRATIVE PERSONNEL

Five-Year Program

	No. to be Trained FY 74	No. Hours Entry Training Per Individual	Total Hours Entry Training	No. Hours Refresher Training Per Individual	Total Hrs. Ref. Training Over Yrs. 1969-73	Total Hours Training Over Yrs. 1969-73	Place of Training	No. of Center Professors in Bus. Admin.
Office of Director								
GS 5-11	71	40	2,840	24 tri	2,840	5,680	Center	.14
GS 12-18	109	80	8,720	40 tri	7,249	15,969	Center	.40
Motor Vehicle Safety Performance Service								
GS 5-11	176	40	7,040	24 tri	7,040	14,080	Center	.35
GS 12-18	500	80	40,000	40 tri	33,250	73,250	Center	1.83
Highway Safety Program Service								
GS 5-11	116	40	4,640	24 tri	4,640	9,280	Center	.23
GS 12-18	280	80	22,400	40 tri	18,620	41,020	Center	1.03
National Highway Safety Institute								
GS 5-11	175	40	7,000	24 tri	7,000	14,000	Center	.35
GS 12-18	362	80	28,960	40 tri	24,073	53,033	Center	1.33
Total	1,789							5.66

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* Memorandum from NHSB (undated).

Appendix 2

DEVELOPMENT OF PROGRAM STRATEGY FOR THE PLACEMENT OF CENTERS

Location Strategy for Regional Centers and Regional Consortia for Highway Safety Manpower Development and Research Centers

Two alternatives considered the establishment of a system of Highway Safety Manpower Development and Research (HSMDR) centers on a regional basis, each to be located at one or more university-level institutions. Following is a description of the main regionalization criteria and a summary of its development, as performed for the generalized purposes of this study.

1. Functions of the Agency

The Office of Safety Manpower Development (OSMD) of NHSB is concerned with the training and education of individuals directly connected with the field of highway safety at all levels of government and at all levels of the private sector. The need to standardize highway safety objectives and procedures throughout the country is recognized by the enactment of the National Highway Safety Act of 1966. This need applies in full force to the uniform dissemination of research, education, and training in this field; therefore homogeneity is a decisive determinant of the regional framework for the development of highway safety manpower.

In line with the preceding considerations, it was necessary to construct a "client-density" map to show the distribution of highway safety specialists manpower requirements in terms of geographically-related indices. (See text of Chapter II.) This map made possible to insure that the territory for each regional HSMDR center encompassed a roughly equal number of "customers."

2. The Regional Framework for establishing Regional HSMDR Centers

The objectives of the OSMD are integrally related to other functions of the DOT which are not new and for which regionalization is already an accomplished fact. Such is the case of the Federal Highway Administration and other federal agencies. Administrative convenience and operation of HSMDR centers are closely related to factors such as highway mileage, secondary school enrollment, population, etc., which in turn determine the distribution and density of highway safety manpower requirements throughout the nation.

Various economic legal, political and legislative factors strongly influence the construct of the regional framework. Correspondingly, the availability of data is primarily expressed in statistical series for whole states. This dictated that the state become the smallest sub-regional unit upon which the regional framework was developed.

3. The comparison of maximum impact locations

The evaluation of maximum impact benefits of a center is a function of the highway safety program objectives: the development of highway safety manpower. Within a given region, the highest index of manpower requirements determined the selection of the sub-region (state) to be recommended for the location of the center. Beyond this point, the qualifications of the available candidate university-level institutions guided the specific location ultimately selected within such state, following the criterion described in Chapter 4, Identification of Possible Candidate Institutions.

4. Site Selection Procedures

The regional framework was developed by successive correlations of the basic factors used for estimating manpower requirements and their geographical distribution. The geographical distribution of each of these factors was individually used to delineate regions providing a balanced share of the national total for each center. Observation of the various distributions thus obtained indicated a fairly congruous regional pattern; further analysis established the relative degree of importance of each basic factor with respect to the total national manpower requirements, which permitted calculation of a single composite factor for each state; these weighted composite factors were used to obtain the regionalization map shown in Chapter 2 of the text.

The identification of the basic factors for estimating the manpower requirements was made by analysis of the Safety Specialist Manpower report[1] and it is summarized in Appendix 2-1. The report provides data for safety specialists for state government manpower requirements. It was assumed in this analysis that the requirements for other levels of government are based on the same factors. Therefore an order-of-magnitude estimate of local government requirements subsequently submitted in a letter-supplement to the same report [2] was distributed by job titles on this assumption; the following list of basic factors, shows their relative importance in percent of state and local manpower requirements:

Basic Factors	Percent of Manpower Requirements by Gov. State	Local	State+Local
Road Mileage in State (Total)	58.7%	47.2%	48.7%
School Enrollment	19.3	38.2	36.1
Population	10.2	12.6	12.5
Registered Vehicles	10.7	--	0.8
No. of Government bodies	1.1	2.0	1.9
Total	100.0%	100.0%	100.0%

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[1] Ref. 1, Appendix 4-1

[2] Exhibit, Appendix 1-12

Maps with the regional delineation obtained for each of the basic factors (except for the number of government bodies) are shown in Appendices 2-3 to 2-6, inclusive, and the final regionalization map is shown in the text, on Chapter 2, based on the combined weighted index of national manpower requirements.

Location Strategy for National Highway Safety Manpower Development and Research Center

Two alternatives considered the establishment of a single HSMDR Center of national scope, to be located on a university level institution or independently as a federal academy.

Two basic location parameters must be singled out from the criteria described for the preceding alternatives: Cost factors related to accesibility and availability of highly qualified candidate institutions for the university-based alternative.

A gravity analysis was made in order to obtain the site of minimum travel expenses, maximum accessibility by air carriers and availability of a highly qualified candidate university institution. The theoretical centroid, determined by relating all the combined manpower indices to common axes, was near Terre Haute, Indiana. The nearest city meeting the other criteria was St. Louis, Missouri. No further analysis is warranted for the generalized purposes of this study.

ESTIMATING FACTORS OF HIGHWAY SAFETY SPECIALIST MANPOWER BY JOB TITLES

STATE AND LOCAL GOVERNMENTS MANPOWER REQUIREMENTS

Safety Specialist Generalized Job Title	Estimating Factors	State Govt. Requirements[*]	Local Govt. Requirements[†]	State and Local Requirements	
		1968 Total	1968 Total	1968 Total	Percent of Total
Planning & Administration:					
Governor's Highway Safety Program Director	No. of Govt. Levels	50	614	664	0.1
Highway Safety Program Analyst	Population	96)	615	736	0.1
Highway Safety Public Information Officer	Population	25)			
Periodic Motor Vehicle Inspection:					
Motor Vehicle Inspector	Vehicle Registration	9,192			
Motor Vehicle Station Inspector	Vehicle Registration	911		911	0.1
Motorcycle Safety:					
Motor Vehicle Inspector	Vehicle Registration	292		292	0.1
Driver License Examiner	Vehicle Registration	127		127	0.0
Driver Education:					
Driver Training Program Specialist	No. of Govt. Levels	200		200	0.0
Driver Education Supervisor	No. of Govt. Levels	3,063		3,063	0.4
Driver Education Teacher	Sec. Sch. Enrollment	8,872		8,872	1.1
Driver Retraining Instructor	Vehicle Registration	1,872		1,872	0.2

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[*] Reference: Safety Specialist Manpower Report, Vol. I, Alt. 2

[†] Reference: Safety Specialist Manpower Report, Supplement--Letter Report of 14 October, 1968

Safety Specialist Generalized Job Title	Estimating Factors	State Govt. Requirements*	Local Govt. Requirements†	State and Local Requirements	
		1968 Total	1968 Total	1968 Total	Percent of Total
Driver Licensing:					
Driver License Examiner	Vehicle Registration	2,703		2,703	0.3
Driver License Hearing Officer	Vehicle Registration	348		348	0.1
Codes & Laws:					
Codes & Laws Program Specialist	No. of Govt. Levels	50	359	409	0.1
Traffic Courts:					
Traffic Court Judges	Population	1,338	9,448	10,786	1.4
Traffic Court Program Specialist	No. of Govt. Levels	50	524	574	0.1
Alcohol in Relation to Highway Safety:					
Alcohol Technical Specialist	Population	195)	18,545	20,746	2.6
Breath Examiner Specialist	Population	2,006)			
Identif. & Surveillance of Accident Location:					
Accident Site Investigator	Highway Mileage	1,474)	2,537	5,048	0.6
Accident Site Investigator Aide	Highway Mileage	1,037)			
Traffic Records:					
Traffic Records Analyst	No. of Govt. Levels	100)	1,078	1,228	0.2
Traffic Records System Analyst	No. of Govt. Levels	50)			
Emergency Medical Service:					
Emerg. Medical Service Program Specialist	No. of Govt. Levels	50	9,377	9,427	1.2
Emerg. Med. Services Field Representative	Population	207	28,133	28,340	3.6

Safety Specialist Generalized Job Title	Estimating Factors	State Govt. Requirements*	Local Govt. Requirements†	State and Local Requirements	
		1968 Total	1968 Total	1968 Total	Percent of Total
Highway Design, Construction, & Maintenance:					
Highway Engineer - Safety	Highway Mileage	1,075)	2,398	4,772	0.6
Engineering Aide - Safety	Highway Mileage	742)			
Highway Safety Site Officer	No. of Govt. Levels	557)			
Traffic Control Devices:					
Traffic Engineer	Highway Mileage	789)	1,808	3,598	0.5
Engineering Aide - Traffic	Highway Mileage	495)			
Traffic Control Device Technician	Highway Mileage	506)			
Pedestrian Safety:					
Pedestrian Safety Program Specialist	No. of Govt. Levels	50)	359	409	0.1
Traffic Records Program Analyst	No. of Govt. Levels	0)			
Police Traffic Services:					
Police Traffic Services Program Specialist	No. of Govt. Levels	100	657	757	0.1
Police Traffic Services Officer	Highway Mileage	1,174)	329,658	368,762	47.0
Police Traffic Services Patrolman	Highway Mileage	37,930)			
Debris Clean-Up & Hazard Control:					
State Wrecker Operator	Population	3,696)	33,759	37,510	4.8
State Wrecker Field Representative	Population	55)			

Page 4 of
Appendix 2-1

Safety Specialist Generalized Job Title	Estimating Factors	State Govt. Requirements*	Local Govt. Requirements*	State and Local Requirements	
		1968 Total	1968 Total	1968 Total	Percent of Total
School Bus Safety:					
School Bus Program Specialist	No. of Govt. Levels	50		50	0.0
School Bus Driver Training Officer	No. of Govt. Levels	409)			
Motor Vehicle Inspect./Motor Vehicle		)	271,621	272,162	34.6
Station Inspect.	Sec. Sch. Enrollment	132)			
Total:		72,876#	711,490	784,366	100.0

Based on Motor Vehicle Station Inspection.

ESTIMATING FACTORS OF HIGHWAY SAFETY SPECIALIST MANPOWER BY STATES

States	Percent of National Totals				Weighted Percent of Manpower Requirements (State and Local)					
	Highway Mileage	Secondary School Enrollment	Population	Registered Vehicles	Highway Mileage	Secondary School Enrollment	Population	Number of Governments	Registered Vehicles	Combination
Alabama	2.1	2.4	1.8	1.8	1.023	0.866	0.225	0.038	0.014	2.166
Alaska	0.2	0.1	0.1	0.1	0.097	0.036	0.013	0.038	0.001	0.185
Arizona	1.1	0.6	0.8	0.9	0.536	0.217	0.100	0.038	0.007	0.898
Arkansas	2.2	1.3	1.0	1.0	1.071	0.469	0.125	0.038	0.008	1.711
California	4.5	9.8	9.8	10.9	2.191	3.539	1.224	0.038	0.087	7.079
Colorado	2.2	1.3	1.0	1.3	1.071	0.469	0.125	0.038	0.010	1.713
Connecticut	0.5	1.3	1.5	1.6	0.244	0.469	0.188	0.038	0.013	0.952
Delaware	0.1	0.3	0.3	0.3	0.049	0.108	0.038	0.038	0.002	0.235
District of Columbia	0.1	0.3	0.4	0.3	0.049	0.108	0.050	-----	0.002	0.209
Florida	2.2	3.5	3.0	3.4	1.071	1.264	0.375	0.038	0.027	2.775
Georgia	2.6	2.3	2.3	2.2	1.266	0.830	0.288	0.038	0.018	2.440
Hawaii	0.1	0.4	0.4	0.3	0.049	0.144	0.050	0.038	0.002	0.283
Idaho	1.4	0.5	0.4	0.5	0.682	0.180	0.050	0.038	0.004	0.954
Illinois	3.4	4.7	5.5	5.0	1.656	1.697	0.687	0.038	0.041	4.119
Indiana	2.5	2.8	2.5	2.7	1.218	1.011	0.312	0.038	0.022	2.601
Iowa	3.0	1.2	1.4	1.7	1.461	0.433	0.175	0.038	0.014	2.121
Kansas	3.5	0.9	1.1	1.5	1.703	0.325	0.138	0.038	0.012	2.216
Kentucky	1.9	1.5	1.6	1.7	0.925	0.542	0.200	0.038	0.014	1.719
Louisiana	1.4	1.9	1.8	1.7	0.682	0.686	0.225	0.038	0.014	1.645
Maine	0.6	0.5	0.5	0.5	0.292	0.180	0.062	0.038	0.004	0.576
Maryland	0.7	2.1	1.8	1.6	0.341	0.758	0.225	0.038	0.013	1.375
Massachusetts	0.7	2.8	2.7	2.3	0.341	1.011	0.338	0.038	0.018	1.746
Michigan	3.1	5.3	4.3	4.3	1.510	1.913	0.537	0.038	0.034	4.032
Minnesota	3.4	2.3	1.8	2.1	1.656	0.830	0.225	0.038	0.017	2.766
Mississippi	1.8	1.4	1.2	1.0	0.877	0.505	0.150	0.038	0.008	1.578

States	Percent of National Totals				Weighted Percent of Manpower Requirements (State and Local)					
	Highway Mileage	Secondary School Enrollment	Population	Registered Vehicles	Highway Mileage	Secondary School Enrollment	Population	Number of Governments	Registered Vehicles	Combination
Missouri	3.1	1.6	2.3	2.4	1.510	0.578	0.288	0.038	0.019	2.433
Montana	2.0	0.4	0.4	0.5	0.974	0.144	0.050	0.038	0.004	1.210
Nebraska	2.8	0.8	0.7	0.9	1.364	0.289	0.088	0.038	0.007	1.786
Nevada	1.3	0.3	0.2	0.3	0.633	0.108	0.025	0.038	0.002	0.806
New Hampshire	0.4	0.3	0.3	0.4	0.195	0.108	0.038	0.038	0.003	0.382
New Jersey	0.9	2.8	3.5	3.3	0.438	1.011	0.438	0.038	0.026	1.951
New Mexico	1.8	0.7	0.5	0.6	0.877	0.253	0.062	0.038	0.004	1.234
New York	2.8	8.8	9.4	6.5	1.364	3.178	1.174	0.038	0.052	5.806
North Carolina	2.3	2.1	2.6	2.4	1.120	0.758	0.325	0.038	0.019	2.260
North Dakota	2.9	0.3	0.3	0.4	1.412	0.108	0.038	0.038	0.003	1.599
Ohio	2.9	4.0	5.3	5.6	1.412	1.444	0.662	0.038	0.045	3.601
Oklahoma	2.9	1.6	1.3	1.6	1.412	0.578	0.162	0.038	0.013	2.203
Oregon	2.3	1.1	1.0	1.2	1.120	0.397	0.125	0.038	0.010	1.690
Pennsylvania	3.1	6.2	5.9	5.5	1.510	2.239	0.738	0.038	0.045	4.570
Rhode Island	0.1	0.4	0.5	0.4	0.049	0.144	0.062	0.038	0.003	0.296
South Carolina	1.6	1.6	1.3	1.2	0.779	0.578	0.162	0.038	0.010	1.567
South Dakota	2.3	0.3	0.3	0.4	1.120	0.108	0.038	0.038	0.003	1.403
Tennessee	2.1	1.9	2.0	1.9	1.023	0.686	0.250	0.038	0.015	2.012
Texas	6.3	4.3	5.5	6.1	3.067	1.553	0.688	0.038	0.049	5.395
Utah	1.0	0.8	0.5	0.6	0.487	0.289	0.062	0.038	0.005	0.881
Vermont	0.4	0.2	0.2	0.2	0.195	0.072	0.025	0.038	0.002	0.332
Virginia	1.6	2.4	2.3	2.0	0.779	0.866	0.288	0.038	0.016	1.987
Washington	2.0	2.1	1.5	1.9	0.974	0.758	0.188	0.038	0.015	1.973
West Virginia	1.0	1.1	0.9	0.8	0.487	0.397	0.112	0.038	0.006	1.040
Wisconsin	2.7	2.2	2.1	2.0	1.315	0.794	0.262	0.038	0.016	2.425
Wyoming	2.1	0.2	0.2	0.2	1.023	0.072	0.025	0.038	0.002	1.160
U. S. Total	100.0	100.0	100.0	100.0	48.700	36.100	12.500	1.900	0.800	100.000

Source: SRI--data from U.S. Bureau of the Census, Statistical Abstract of the U.S. 1968.

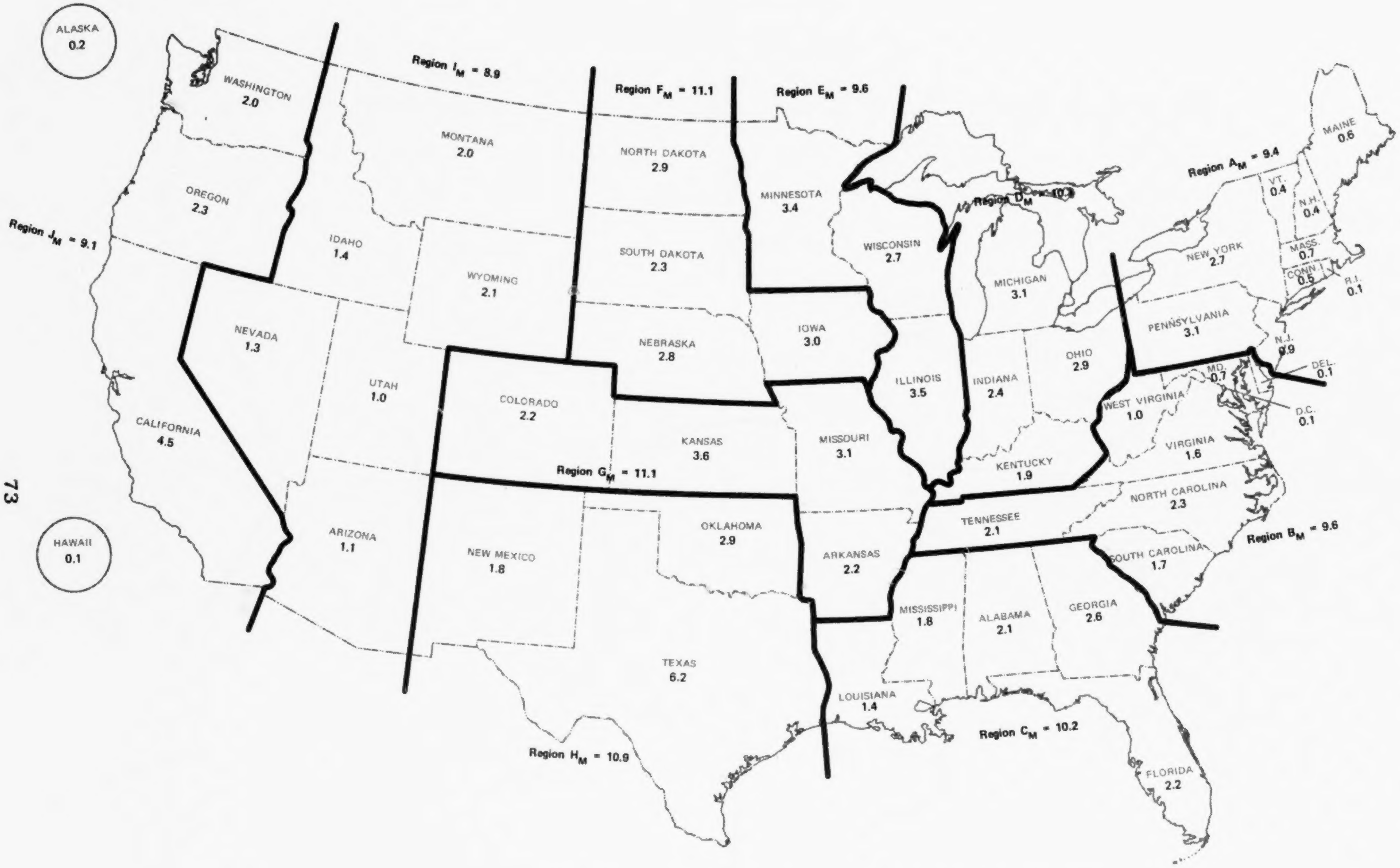
ALASKA 0.2
HAWAII 0.1
WASHINGTON 2.0
OREGON 2.3
CALIFORNIA 4.5
IDAHO 1.4
NEVADA 1.3
MONTANA 2.0
WYOMING 2.1
UTAH 1.0
ARIZONA 1.1
COLORADO 2.2
NEW MEXICO 1.8
NORTH DAKOTA 2.9
SOUTH DAKOTA 2.3
NEBRASKA 2.8
KANSAS 3.6
OKLAHOMA 2.9
TEXAS 6.2
MINNESOTA 3.4
IOWA 3.0
MISSOURI 3.1
ARKANSAS 2.2
LOUISIANA 1.4
WISCONSIN 2.7
ILLINOIS 3.5
MICHIGAN 3.1
INDIANA 2.4
OHIO 2.9
KENTUCKY 1.9
TENNESSEE 2.1
MISSISSIPPI 1.8
ALABAMA 2.1
GEORGIA 2.6
FLORIDA 2.2
SOUTH CAROLINA 1.7
NORTH CAROLINA 2.3
VIRGINIA 1.6
WEST VIRGINIA 1.0
MD. 0.7
D.C. 0.1
DEL. 0.1
N.J. 0.9
PENNSYLVANIA 3.1
NEW YORK 2.7
VT. 0.4
N.H. 0.4
MAINE 0.6
MASS. 0.7
CONN. 0.5
R.I. 0.1
Region I_M = 8.9
Region F_M = 11.1
Region E_M = 9.6
Region D_M = 10.3
Region A_M = 9.4
Region J_M = 9.1
Region G_M = 11.1
Region B_M = 9.6
Region H_M = 10.9
Region C_M = 10.2

FIGURE 2-3 GEOGRAPHICAL DISTRIBUTION OF HIGHWAY MILEAGE BY STATES AND REGIONS—REGIONS A_M THROUGH J_M—percent

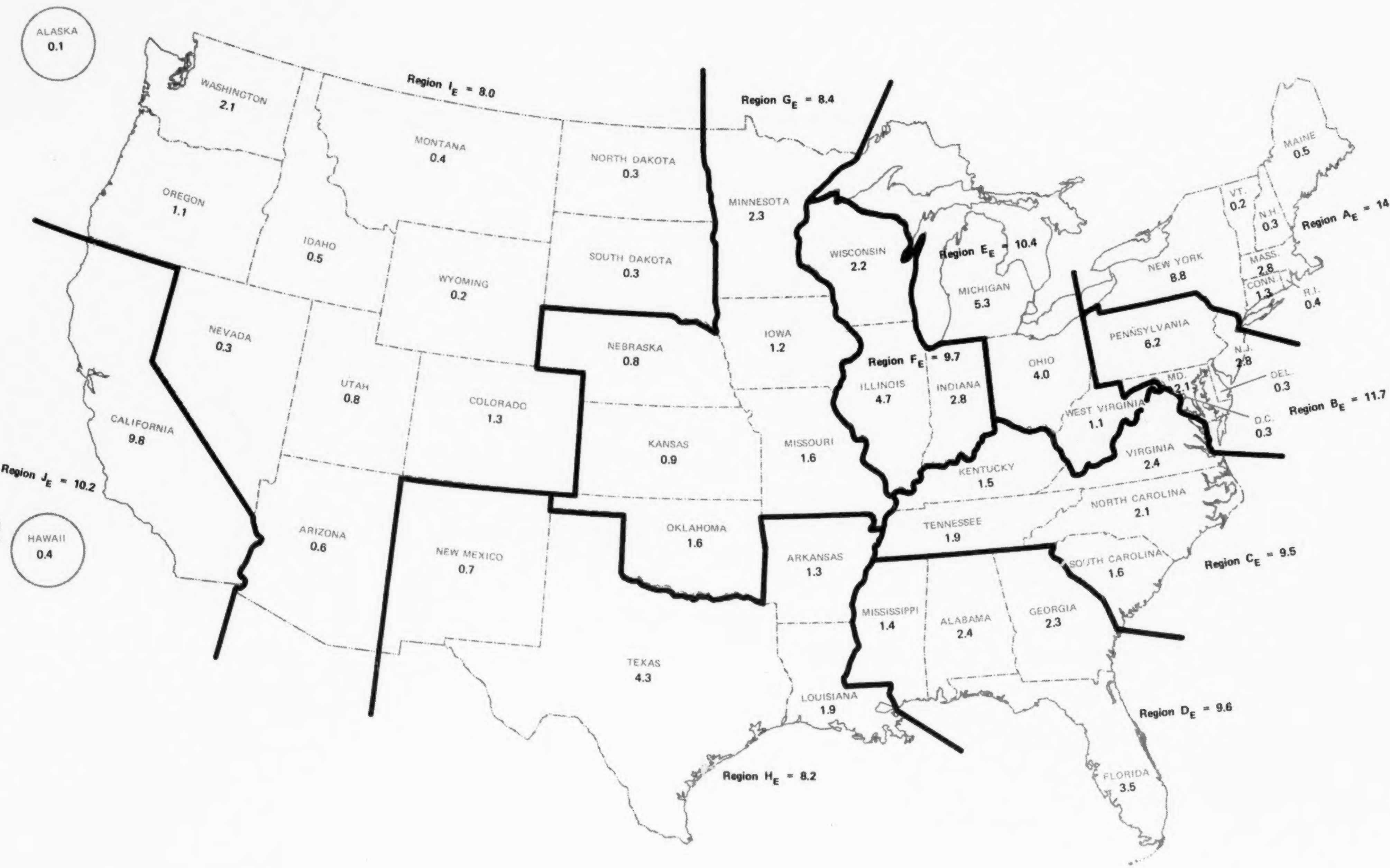
ALASKA 0.1
HAWAII 0.4
WASHINGTON 2.1
OREGON 1.1
CALIFORNIA 9.8
NEVADA 0.3
IDAHO 0.5
MONTANA 0.4
WYOMING 0.2
UTAH 0.8
ARIZONA 0.6
COLORADO 1.3
NEW MEXICO 0.7
NORTH DAKOTA 0.3
SOUTH DAKOTA 0.3
NEBRASKA 0.8
KANSAS 0.9
OKLAHOMA 1.6
TEXAS 4.3
MINNESOTA 2.3
IOWA 1.2
MISSOURI 1.6
ARKANSAS 1.3
LOUISIANA 1.9
WISCONSIN 2.2
ILLINOIS 4.7
MICHIGAN 5.3
INDIANA 2.8
OHIO 4.0
KENTUCKY 1.5
TENNESSEE 1.9
MISSISSIPPI 1.4
ALABAMA 2.4
GEORGIA 2.3
FLORIDA 3.5
SOUTH CAROLINA 1.6
NORTH CAROLINA 2.1
VIRGINIA 2.4
WEST VIRGINIA 1.1
MD. 2.1
D.C. 0.3
DEL. 0.3
N.J. 2.8
PENNSYLVANIA 6.2
NEW YORK 8.8
VT. 0.2
N.H. 0.3
MAINE 0.5
MASS. 2.8
CONN. 1.3
R.I. 0.4
Region A_E = 14.3
Region B_E = 11.7
Region C_E = 9.5
Region D_E = 9.6
Region E_E = 10.4
Region F_E = 9.7
Region G_E = 8.4
Region H_E = 8.2
Region I_E = 8.0
Region J_E = 10.2

FIGURE 2-4 GEOGRAPHICAL DISTRIBUTION OF SECONDARY SCHOOL ENROLLMENT BY STATES AND REGIONS—REGIONS A_E THROUGH J_E—percent

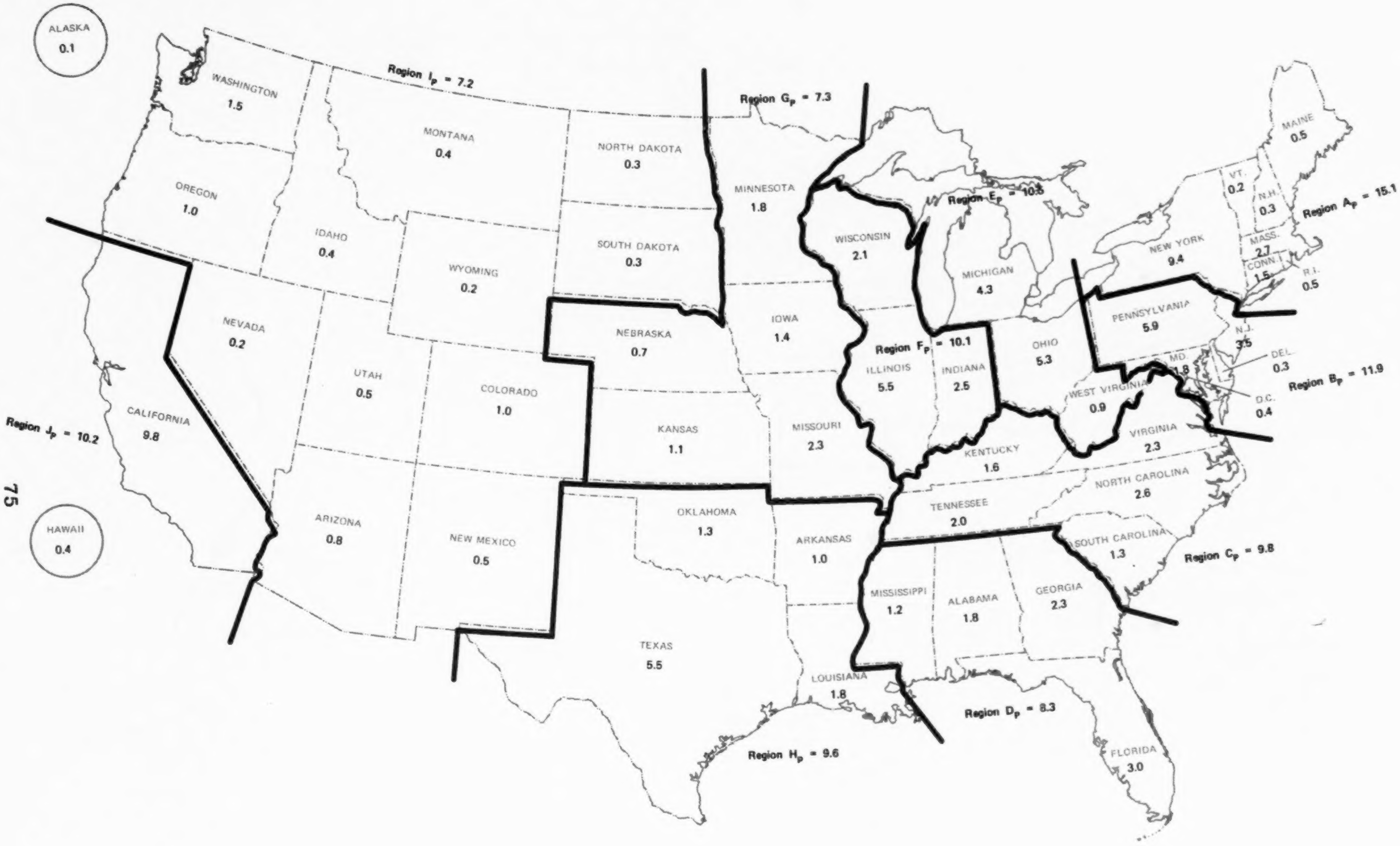
ALASKA 0.1
WASHINGTON 1.5
OREGON 1.0
CALIFORNIA 9.8
NEVADA 0.2
IDAHO 0.4
MONTANA 0.4
WYOMING 0.2
UTAH 0.5
ARIZONA 0.8
COLORADO 1.0
NEW MEXICO 0.5
HAWAII 0.4
NORTH DAKOTA 0.3
SOUTH DAKOTA 0.3
NEBRASKA 0.7
KANSAS 1.1
OKLAHOMA 1.3
TEXAS 5.5
MINNESOTA 1.8
IOWA 1.4
MISSOURI 2.3
ARKANSAS 1.0
LOUISIANA 1.8
WISCONSIN 2.1
ILLINOIS 5.5
MICHIGAN 4.3
INDIANA 2.5
OHIO 5.3
KENTUCKY 1.6
TENNESSEE 2.0
MISSISSIPPI 1.2
ALABAMA 1.8
GEORGIA 2.3
FLORIDA 3.0
SOUTH CAROLINA 1.3
NORTH CAROLINA 2.6
VIRGINIA 2.3
WEST VIRGINIA 0.9
MD. 1.8
D.C. 0.4
DEL. 0.3
N.J. 3.5
PENNSYLVANIA 5.9
NEW YORK 9.4
VT. 0.2
N.H. 0.3
MAINE 0.5
MASS. 2.7
CONN. 1.5
R.I. 0.5
Region A_p = 15.1
Region B_p = 11.9
Region C_p = 9.8
Region D_p = 8.3
Region E_p = 10.5
Region F_p = 10.1
Region G_p = 7.3
Region H_p = 9.6
Region I_p = 7.2
Region J_p = 10.2

FIGURE 2-5 GEOGRAPHICAL DISTRIBUTION OF POPULATION BY STATES AND REGIONS—REGIONS A_p THROUGH J_p—percent

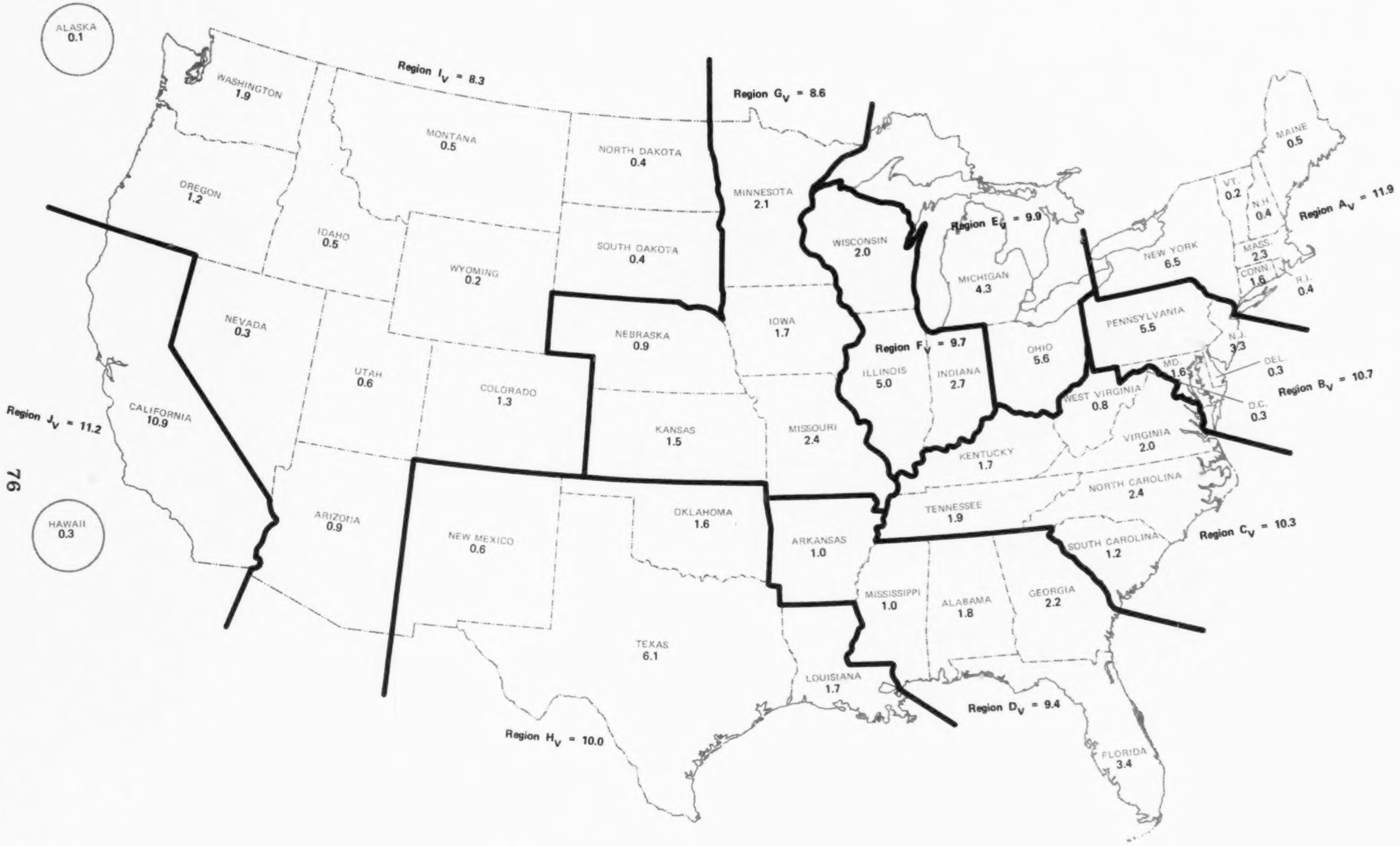
ALASKA 0.1
HAWAII 0.3
WASHINGTON 1.9
OREGON 1.2
CALIFORNIA 10.9
IDAHO 0.5
NEVADA 0.3
MONTANA 0.5
WYOMING 0.2
UTAH 0.6
ARIZONA 0.9
COLORADO 1.3
NEW MEXICO 0.6
NORTH DAKOTA 0.4
SOUTH DAKOTA 0.4
NEBRASKA 0.9
KANSAS 1.5
OKLAHOMA 1.6
TEXAS 6.1
MINNESOTA 2.1
IOWA 1.7
MISSOURI 2.4
ARKANSAS 1.0
LOUISIANA 1.7
WISCONSIN 2.0
ILLINOIS 5.0
MICHIGAN 4.3
INDIANA 2.7
OHIO 5.6
KENTUCKY 1.7
TENNESSEE 1.9
MISSISSIPPI 1.0
ALABAMA 1.8
GEORGIA 2.2
FLORIDA 3.4
SOUTH CAROLINA 1.2
NORTH CAROLINA 2.4
VIRGINIA 2.0
WEST VIRGINIA 0.8
MD. 1.6
DEL. 0.3
D.C. 0.3
PENNSYLVANIA 5.5
N.J. 3.3
NEW YORK 6.5
CONN. 1.6
R.I. 0.4
MASS. 2.3
VT. 0.2
N.H. 0.4
MAINE 0.5
Region A_V = 11.9
Region B_V = 10.7
Region C_V = 10.3
Region D_V = 9.4
Region E_V = 9.9
Region F_V = 9.7
Region G_V = 8.6
Region H_V = 10.0
Region I_V = 8.3
Region J_V = 11.2

FIGURE 2-6 GEOGRAPHICAL DISTRIBUTION OF REGISTERED VEHICLES BY STATES AND REGIONS—REGIONS A_V THROUGH J_V—percent

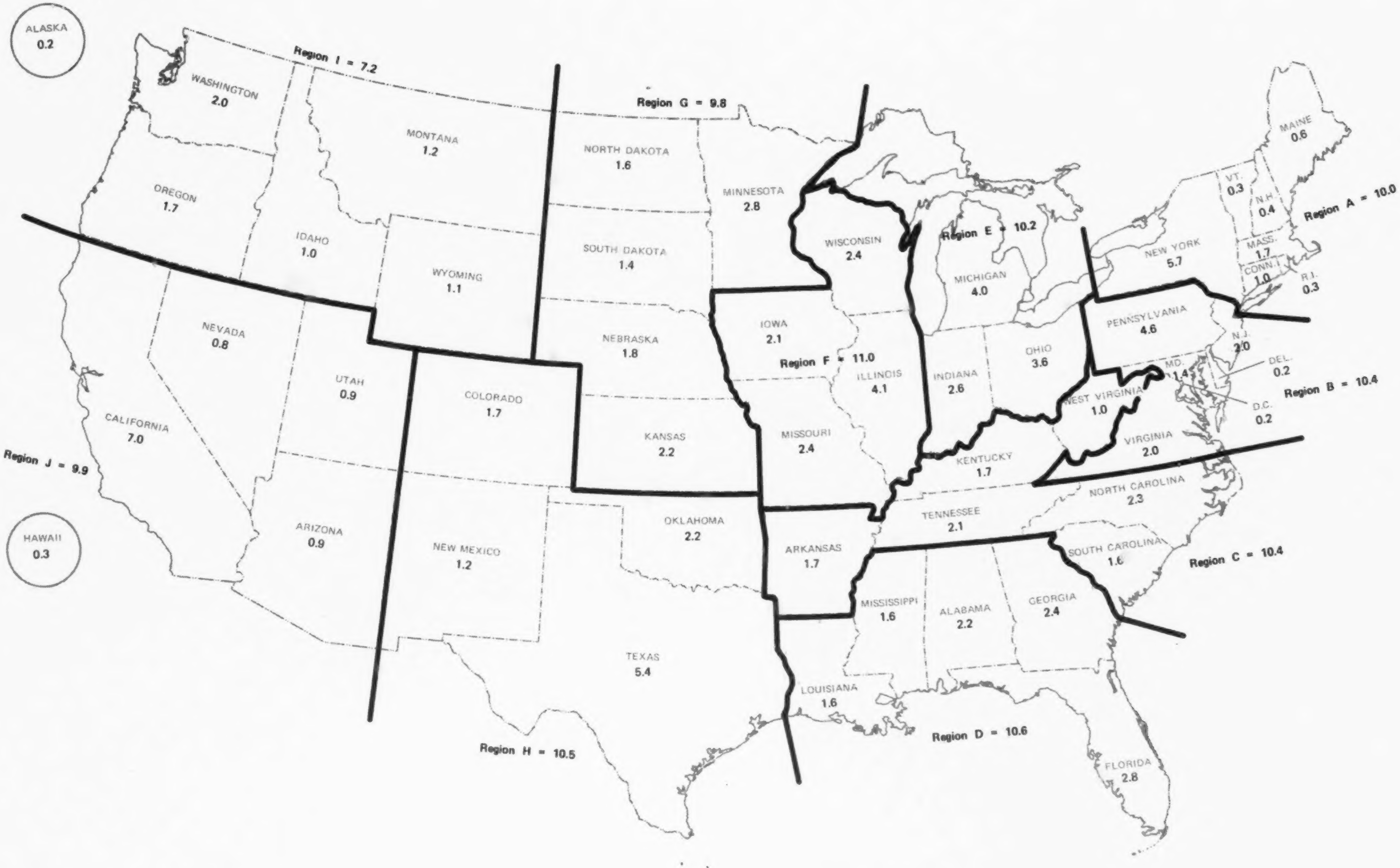
ALASKA 0.2
HAWAII 0.3
Region I = 7.2
Region G = 9.8
Region J = 9.9
Region H = 10.5
Region F = 11.0
Region E = 10.2
Region D = 10.6
Region C = 10.4
Region B = 10.4
Region A = 10.0
WASHINGTON 2.0
OREGON 1.7
CALIFORNIA 7.0
IDAHO 1.0
NEVADA 0.8
MONTANA 1.2
WYOMING 1.1
UTAH 0.9
ARIZONA 0.9
COLORADO 1.7
NEW MEXICO 1.2
NORTH DAKOTA 1.6
SOUTH DAKOTA 1.4
NEBRASKA 1.8
KANSAS 2.2
OKLAHOMA 2.2
TEXAS 5.4
MINNESOTA 2.8
IOWA 2.1
MISSOURI 2.4
ARKANSAS 1.7
LOUISIANA 1.6
WISCONSIN 2.4
ILLINOIS 4.1
MICHIGAN 4.0
INDIANA 2.6
OHIO 3.6
KENTUCKY 1.7
TENNESSEE 2.1
MISSISSIPPI 1.6
ALABAMA 2.2
GEORGIA 2.4
FLORIDA 2.8
SOUTH CAROLINA 1.6
NORTH CAROLINA 2.3
VIRGINIA 2.0
WEST VIRGINIA 1.0
MD. 1.4
D.C. 0.2
DEL. 0.2
N.J. 2.0
PENNSYLVANIA 4.6
NEW YORK 5.7
VT. 0.3
N.H. 0.4
MAINE 0.6
MASS. 1.7
CONN. 1.0
R.I. 0.3

FIGURE 2-7 GEOGRAPHICAL DISTRIBUTION OF STATE AND LOCAL MANPOWER REQUIREMENTS BY STATES AND REGIONS—percent

Appendix 2-8

LISTING OF FEDERAL COLLEGE-LEVEL TRAINING, EDUCATION, AND RESEARCH PROGRAMS THAT ARE ANALOGOUS TO THE PROPOSED NHSB PROGRAM FOR HSMD & R CENTERS

First Program Group:

Short-Course Training, Graduate Education, and Academic Research Functions

EDUCATIONAL RESEARCH TRAINING FELLOWSHIPS

Activity: Grants to colleges and other organizations for supporting training programs in research. Aids in curriculum development, fellowship, training grants, etc.

Basis of Analogy: Provides for training researchers in universities

Sponsor: Research Analysis and Allocation Staff, USOE

Legislation: PL 83-840, amended by Elementary and Secondary Education Act, Title IV

WATER POLLUTION RESEARCH & TRAINING

Activity: Grants to schools & individuals for research, training, and demonstrations

Basis of Analogy: Aid in both research and training to colleges

Sponsor: Federal Water Pollution Control Administration, DOI

Legislation: Federal Water Pollution Control Act

LIBRARY TRAINING AND RESEARCH

Activity: Grants to colleges for course costs, student fellowships, research, and demonstration projects

Basis of Analogy: Supports research and training in nationally needed skills

Sponsor: Division of Library Services and Educational Facilities, USOE

Legislation: Higher Education Act of 1965

MEDICAL LIBRARY ASSISTANCE

Activity: Grants to libraries for facilities, courses, and research; to individuals for traineeships

Basis of Analogy: Provides training and facilities (similar to Library Training and Research)

Sponsor: Extramural Programs, National Library of Medicine, PHS

Legislation: Public Health Service Act, Title III

MENTAL HEALTH RESEARCH AND TRAINING

Activity: Grants to institutions for research, to colleges for fellowships, and to individuals for research

Basis of Analogy: Program to encourage needed national skills through education, research, and training

Sponsor: National Institute of Mental Health, PHS

Legislation: Public Health Service Act

NUCLEAR EDUCATION AND TRAINING

Activity: Grants for equipment and supplies to colleges, education, fellowships, training institutes, research support, and summer employment for students, workers, and teachers

Basis of Analogy: Provides support in research, graduate education, and training to develop manpower for nationally needed skills (similar to Water Pollution Research and Training)

Sponsor: Division of Nuclear Education and Training, AEC

Legislation: PL 83-703

Second Program Group:

Short-Course Training and Graduate Education Functions

ARTS AND HUMANITIES "INSTITUTES"

Activity: Grants to universities for regular or short courses to train teachers

Basis of Analogy: Aid to colleges for special and regular academic training of working teachers

Sponsor: Division of Educational Personnel Training, USOE

Legislation: Arts and Humanities Foundation Act

ALLIED HEALTH PROFESSIONS EDUCATIONAL ASSISTANCE

Activity: Various types of educational grants to many schools

Basis of Analogy: Provides a wide variety of forms of assistance, including (1) formula grants for basic improvement of curricula, (2) institutional grants for providing advanced traineeships to individual students, (3) developmental grants for revising curricula in new technologies, and (4) grants for construction

Sponsor: Division of Allied Health Manpower, PHS

Legislation: Allied Health Training Act of 1966

INSTITUTIONAL ASSISTANCE IN EDUCATION

Activity: Assistance to colleges for faculty development, libraries curriculum development, and evaluations

Basis of Analogy: Supports education and training for nationally needed skills

Sponsor: Graduate Academic Programs Branch, USOE

Legislation: Higher Education Act of 1965

PUBLIC HEALTH TRAINING

Activity: Traineeships to students and professionals; grants to schools for specialized training in public health fields

Basis of Analogy: Support of education and training in nationally needed skills

Sponsor: Division of Health Manpower Educational Services, PHS

Legislation: Public Health Service Act

TRAINING PROFESSIONALS IN EDUCATION OF THE HANDICAPPED

Activity: Grants to states and colleges for developing programs and training students

Basis of Analogy: Provides specialized training and education in needed skills (similar to Allied Health Professional Educational Assistance)

Sponsor: Division of Training Programs, Bureau of Education for the Handicapped, USOE

Legislation: PL 85-926

VEHICLE SAFETY EDUCATION AND TRAINING

Activity: Tuition to colleges (such as the University of Southern California) to train and educate military personnel and other Federal employees in vehicle safety skills

Basis of Analogy: Provides training and education in highway safety skills at special centers to Federal government personnel

Sponsor: USAF, USN

Legislation: Title 10, U.S. Code

Third Program Group:

Short-Course Training and Academic Research Functions

VOCATIONAL REHABILITATION RESEARCH AND TRAINING

Activity: Grants to agencies and schools for research and training centers

Basis of Analogy: Envisions centers for specialized research and training

Sponsor: Vocational Rehabilitation Administration, HEW

Legislation: Vocational Rehabilitation Act as amended

REGIONAL MEDICAL PROGRAMS

Activity: Grants to institutions and consortia for research, training, and demonstration projects in patient care for disabling diseases

Basis of Analogy: Similar to other medical assistance programs but designed for consortia arrangements

Sponsor: Association Director for Regional Medical Programs, NIH, PHS

Legislation: Heart Disease, Cancer, and Stroke Amendments of 1965

INJURY CONTROL PROGRAMS

Activity: Assistance to state and local government agencies in training and prevention programs. Grants to colleges for research and research training

Basis of Analogy: Supports state and local governments who take initiative in developing research, training, and accident prevention programs

Sponsor: National Center for Urban and Industrial Health, PHS

Legislation: Public Health Service Act

OCCUPATIONAL HEALTH

Activity: Research grants to institutions; free consultation to health agencies

Basis of Analogy: Provides for research and training efforts in health and safety problems

Sponsor: National Center for Urban and Industrial Health, PHS

Legislation: Public Health Service Act

COMMUNITY DEVELOPMENT TRAINING AND RESEARCH

Activity: Grants to states for research on local problems and training of local government employees

Basis of Analogy: State participation in local government training and research development programs

Sponsor: Office of Intergovernmental Relations, HUD

Legislation: Housing Act of 1964

Fourth Program Group:

Short-Course Training Functions

FAA ACADEMY

Activity: Federally operated training academy for FAA employees

Basis of Analogy: Trains Federal employees in and some private and foreign contract students in aviation inspection, traffic control, and safety skills

Sponsor: FAA, Oklahoma City

Legislation: Federal Aviation Act of 1958

CIVIL DEFENSE STAFF COLLEGE

Activity: Short-course training for federal, state, and local officials and private individuals at a Federally-operated school in Battle Creek, Michigan

Basis of Analogy: Centralized Federal training academy for local officials and private citizens (similar in some respects to the FAA Academy)

Sponsor: Office of Civil Defense, Department of the Army

Legislation: Federal Civil Defense Act of 1950

CIVIL DEFENSE ADULT EDUCATION

Activity: Local training of interested individuals, professionals, and students

Basis of Analogy: Provides special training for a nationwide problem

Sponsor: Office of Civil Defense, Department of the Army

Legislation: Federal Civil Defense Act of 1950

COMMUNITY SERVICE COLLEGE PROGRAMS

Activity: Grants to states for using public and private colleges for community service and continuing education programs

Basis of Analogy: State administration of continuing education and public service probrams. Particular emphasis is placed on urban and suburban problems, including transportation

Sponsor: Division of Adult Education Programs, USOE

Legislation: Higher Education Act of 1965

ADVANCED EDUCATIONAL "INSTITUTES"

Activity: Assistance to colleges for conducting regular and short-term institutes, including stipends for students

Basis of Analogy: Supports college level training for nationally needed skills

Sponsor: Division of Educational Personnel Training, USOE

Legislation: National Defense Education Act of 1958

MENTAL RETARDATION TRAINING

Activity: Grants to states for planning and developing community programs. Grants to institutions for training. Grants to individuals for traineeships

Basis of Analogy: Similar to Mental Health Research and Training but oriented toward community programs other than colleges

Sponsor: Division of Mental Retardation, PHS

Legislation: Social Security Act

TRAINING PROFESSIONALS IN CARE OF CRIPPLED CHILDREN

Activity: Grants to colleges for training programs

Basis of Analogy: Similar to No. 10. Provides aid in specialized training for nationally needed skills (similar to Advanced Educational "Institutes")

Sponsor: Children's Bureau, Welfare Administration

Legislation: Basic Act of 1912

Fifth Program Group

Graduate Education and Academic Research Functions

HOWARD UNIVERSITY & GALLAUDET COLLEGE

Activity: 50% Federal support for college and graduate school operating costs

Basis of Analogy: Example of Federal special-purpose aid to semi-private colleges

Sponsor: Independently funded

Legislation: Act of March 2, 1867, Act of June 18, 1954

FORESTRY RESEARCH GRANTS

Activity: Grants to universities for faculty and student research

Basis of Analogy: Provides for conduct of specialized faculty and student research in universities

Sponsor: U. S. Forest Service

Legislation: Forest Products Act

MANPOWER RESEARCH

Activity: Grants and contracts to individuals and schools for research and for development of research capabilities

Basis of Analogy: Aids in developing graduate research capabilities (similar to Forestry Research Grants)

Sponsor: Office of Manpower Policy Evaluation and Research

Legislation: Manpower Development and Training act as amended

RESEARCH FELLOWSHIPS IN HEALTH SCIENCES

Activity: Grants to colleges for fellowships to do advanced and specialized research work

Basis of Analogy: Wide variety of educational and research assistance

Sponsor: National Institutes of Health, PHS

Legislation: Public Health Service Act

Sixth Program Group:

Graduate Education Functions

MID-CAREER DEVELOPMENT OF FEDERAL EMPLOYEES

Activity: Professional training and education program at colleges for career employees

Basis of Analogy: Uses college resources to train career government employees

Sponsor: Civil Service Commission

Legislation: Government Employees Training Act of 1958

MILITARY POSTGRADUATE SCHOOLS

Activity: Federally operated graduate schools, some of which grant degrees

Basis of Analogy: Trains and educates career government personnel

Sponsor: DOD

Legislation: An Act to Establish a Naval Postgraduate School
Public Law 303, July 31, 1947

GRADUATE EDUCATION

Activity: Grants to graduate students for fellowships and to schools for special programs

Basis of Analogy: Graduate level aid to colleges

Sponsor: Division of Graduate Education in Science, NSF

Legislation: National Science Foundation Act of 1950

COLLEGE WORK-STUDY PROGRAMS

Activity: Grants to schools to assist low income students to stay in school

Basis of Analogy: Supports college students

Sponsor: Division of Student Financial Aid, USOE

Legislation: Economic Opportunity Act of 1964

CONSTRUCTION OF GRADUATE EDUCATION FACILITIES

Activity: Grants to assist colleges in expansion of enrollment or on-campus extension services

Basis of Analogy: Federal subsidy to colleges

Sponsor: Division of College Facilities, USOE

Legislation: Higher Education Facilities Act of 1963

HEALTH PROFESSIONAL EDUCATION ASSISTANCE

Activity: Grants for facilities, curricular, student loans, and scholarships given to professional schools

Basis of Analogy: Federal subsidy to colleges for educating critical skills (similar to Allied Health Professional Educational Assistance)

Sponsor: Bureau of Health Manpower, PHS

Legislation: Public Health Services Act

NATIONAL DEFENSE GRADUATE EDUCATION FELLOWSHIPS

Activity: Fellowships to graduate students in education

Basis of Analogy: Encourages individual graduate students to develop nationally needed skills

Sponsor: Graduate Academic Programs Branch, USOE

Legislation: National Defense Education Act of 1958

NURSE TRAINING

Activity: Grants to schools for facilities, course development, scholarships, and student loans

Basis of Analogy: Similar to Allied Health Professional Educational Assistance

Sponsor: Bureau of Health Manpowers, PHS

Legislation: Nurse Training Act of 1964

PROSPECTIVE TEACHER FELLOWSHIPS

Activity: Fellowship to graduate students in elementary or secondary education disciplines

Basis of Analogy: Designed to improve graduate educational qualifications for nationally needed skills

Sponsor: Graduate Academic Programs Branch, USOE

Legislation: Higher Education Act of 1965

TRAINING IN THE ALLIED HEALTH PROFESSIONS

Activity: Grants to colleges for curriculum development and evaluation, for facilities (not presently funded), and for traineeships. Grants are given in selected fields

Basis of Analogy: Purpose of educational assistance (similar to that for Allied Health Professional Educational Assistance)

Sponsor: Bureau of Health Manpower, PHS

Legislation: Allied Health Professional Personnel Training Act of 1966

FELLOWSHIPS FOR CITY PLANNING

Activity: Fellowships to individuals for graduate education in specialized development fields

Basis of Analogy: Provides basic graduate education (similar to National Defense Graduate Education Fellowships)

Sponsor: Assist Secretary for Demonstration and Intergovernmental Relations, HUD

Legislation: Housing Act of 1964

Seventh Program Group:

Academic Research Functions

EDUCATIONAL POLICY RESEARCH CENTERS

Activity: Funds two nonprofit research centers

Basis of Analogy: Establishes multi-disciplinary centers affiliated with, but organizationally independent of universities with 2-year initial funding and annual renewals. The centers specialize in different approaches

Sponsor: Bureau of Research, USOE

Sponsoring Legislation: Elementary and Secondary Education Act Title IV

REGIONAL EDUCATIONAL LABORATORIES

Activity: Funds 10 regional research centers

Basis of Analogy: Provides regional coverage for research, but with emphasis on disseminating information and implementing programs

Sponsor: Division of Laboratories and Research Division, USOE

Legislation: PL 83-480, amended by Elementary and Secondary Education Act

UNIVERSITY CENTERS FOR EDUCATIONAL R & D

Activity: Funds leading educational programs in centrally located universities

Basis of Analogy: Establishes "centers" at colleges to build specialized research capabilities

Sponsor: Research Analysis and Allocation Staff, USOE

Legislation: PL 83-840, amended by Elementary and Secondary Education Act

ARTS AND HUMANITIES RESEARCH

Activity: Support for research to promote arts and humanities education at all levels and in the field

Basis of Analogy: Aid to colleges, local schools, private companies, and individuals for research in education and extension programs

Sponsor: Research Analysis and Allocation Staff, USOE

Legislation: Elementary and Secondary Education Act, Title IV

CORRECTIONAL REHABILITATION MANPOWER

Activity: Grants to nongovernmental organizations for research on rehabilitation manpower

Basis of Analogy: Program of support for research on manpower development in an area of critical skills shortage

Sponsor: Vocational Rehabilitation Administration, HEW

Legislation: Correctional Rehabilitation, Study Act of 1965

RESEARCH SUPPORT IN BIOLOGY, MEDICINE, AND HEALTH

Activity: Grants to institutions for research of interest to AEC

Basis of Analogy: Supports research activities (similar to Arts and Humanities Research)

Sponsor: Division of Biology and Medicine, AEC

Legislation: PL 83-703

SCIENTIFIC RESEARCH GRANTS

Activity: Grants to colleges and (occasionally) individuals for engineering and social science research and research facilities

Basis of Analogy: Provides support for large coordinated research efforts (similar to University Centers for Educational R & D)

Sponsor: Basic Science Divisions, NSF

Legislation: National Science Foundation Act of 1950

BIOMEDICAL RESEARCH

Activity: Technical assistance to medical professionals and institutions for conducting research in a wide variety of medical and biological fields

Basis of Analogy: Support for specialized research programs (similar to Arts and Humanities Research)

Sponsor: Research Service, VA

Legislation: Title 38, U.S. Code

Appendix 3

CRITERIA FOR THE SELECTION OF CANDIDATE UNIVERSITIES

99

Appendix 3-1

SELECTED SOURCE REFERENCES OF DATA FOR SELECTION CRITERIA

Accredited Institutions of Higher Education. National Committee of Regional Accrediting Agencies, New York, February 1969.

American Universities and Colleges, 10th Edition. Otis A. Singletary, Editor. American Council on Education, Washington D.C., August 1968.

Andriot, John L., *Guide to U.S. Government Statistics, 3rd Edition.* Arlington: Documents Index, 1961.

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Directory of U.S. Institutions of Higher Education, Fall 1967, OE - 50052, U.S. Government Printing Office, Washington D.C.

Directory of Urban Research Study Centers. (Prepared by the Committee Staff for the Subcommittee on Urban Affairs of the Joint Economic Committee, Congress of the United States, August 1967.) U.S. Government Printing Office, Washington D.C.

Dykes, Archie P., *Faculty Participation in Academic Decision Making: Report of a Study.* Washington D.C.: American Council on Education, 1968.

Engineering and Technical Enrollments - Fall 1967: Detailed Report. (Prepared by Engineering Manpower Commission of Engineer's Joint Council, February 1968.)

Faculty Salary Schedules in Colleges and Universities. Washington D.C.: National Education Association, 1967/1968.

The Federal Financing of Higher Education. Washington D.C.: Association of American Universities, 1968.

Guide to Graduate Study, 3rd Edition. Jane Graham, Editor. Washington D.C.: American Council on Education, 1965.

Orlans, Harold, *The Effects of Federal Programs on Higher Education.* Brookings Institute, 1962.

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Serrantion, Sal, An Evaluation of College Enrollment Projections - 1965-1980. North Hollywood: Market Compilation and Research Bureau, 1965.

Statistical Services of the United States Government. (Prepared by the Office of Statistical Standards, Executive Office of the President, Bureau of Budget. Revised Edition, 1968.)

Statistics of Higher Education. U.S. Office of Education, U.S. Government Printing Office, Division of Public Documents, Washington, D.C.

Appendix 4

IDENTIFICATION OF CANDIDATE UNIVERSITIES

APPENDIX 4-1

SELECTED SOURCE REFERENCES FOR CHARACTERISTICS OF POSSIBLE CANDIDATE INSTITUTIONS

Booz, Allen & Hamilton Inc., Safety Specialist Manpower: Manpower Training, Volume III, BAH, Washington, D.C., Contract FH-11-6496, National Highway Safety Bureau, U.S. Department of Transportation, Washington, D.C., October 14, 1968.

Campbell, B. J., Safety Research Manpower, Final Report, Highway Safety Research Center, University of North Carolina, Chapel Hill, North Carolina, Contract FH-11-6482, National Highway Safety Bureau, U.S. Department of Transportation, Washington, D.C., June 1968. 92 pp.

Carter, Allan M., ed., American Universities and Colleges, 9th edition, New York: American Council on Education, 1964.

Harmon, Lindsey R. and Herbert Soldz, Doctorate Production in United States Universities 1920-1962: With Baccalaureate Origins of Doctorates in Science, Arts, and Professions, Publication No. 1142, Washington, D.C.: National Academy of Sciences--National Research Council, 1963. 215 pp.

Hawes, Gene R., The New American Guide to Colleges, third edition, New York: Columbia University Press, 1966. 597 pp.

Health, Education and Welfare, U.S. Department of, Office of Education, Division of Educational Statistics, Wayne E. Tolliver, Enrollment for Advanced Degrees, Fall 1960, Circular No. 674, OE-54019-60, Washington, D.C.: U.S. Government Printing Office, 1963. 485 pp.

Health, Education and Welfare, U.S. Department of, Office of Education, National Center for Educational Statistics, Enrollment for Master's and Higher Degrees, Fall 1964, Final Report, OE-54019-64, Washington, D.C.: U.S. Government Printing Office, 1966. 96 pp.

Health, Education and Welfare, U.S. Department of, Office of Education, National Center for Educational Statistics, Paul L. Mason and Mabel C. Rice, Earned Degrees Conferred 1964-1965, OE-54013-65, Washington, D.C.: U.S. Government Printing Office, 1967. 265 pp.

Health, Education, and Welfare, U.S. Department of, Office of Education, Wayne E. Tolliver, Earned Degrees Conferred 1961-1962: Bachelor's and Higher Degrees, Circular No. 719, OE-54013-62, Washington, D.C.: U.S. Government Printing Office, 1963. 235 pp.

National Safety Council, Higher Education Section, College & University Safety Courses, Chicago, NSCHE, 1968. 68 pp.

POSSIBLE CANDIDATE INSTITUTIONS FOR HIGHWAY SAFETY MANPOWER DEVELOPMENT AND RESEARCH CENTERS

(First Level of Selection With Two Basic Characteristics and Other Available Characteristics)

APPENDIX 4-2

University Level Institutions With Degree Granting Authority: • at Ph.D Level in any Field • at M.S. Level in Civil Engineering by States (49 States, 113 Institutions)	Other Characteristics Civil Engineering (Masters +)	Education (Masters +)	Psychology (PhD)	Physiology (Masters +)	Public Administration (Bachelors +)	Business Administration (Bachelors +)	Medicine (MD & Masters)	Public Health (Masters +)	Law (LLB)	Criminology	Police Training	Police Instruction or Administration	Safety & Traffic Education or Administration	Traffic Engineering	Transportation Engineering
Alabama															
Auburn U.	x	x				x									
U. of Alabama	x	x	x	x		x	x		x				x	x	
Arizona															
Arizona State U.	x	x	x		x	x							x+	x	x
U. of Arizona	x	x	x		x	x			x				x		
Arkansas															
U. of Arkansas	x	x	x	x	x	x	x		x						
California															
Calif. Inst. of Tech.	x														
San Jose State	x	x			x	x					x		x		
Stanford U.	x	x	x	x		x	x		x				x		x
U. Calif. (all campuses) (UCLA- Inst. of Trans. & Traffic Engr.)	x	x	x	x	x	x	x	x	x	x				x	x
U. So. Calif.	x	x	x	x	x	x	x		x						x
Colorado															
Colorado State U.	x	x	x	x									x		
U. of Colorado	x	x	x	x	x	x	x		x						
Connecticut															
U. of Connecticut	x	x	x	x	x	x	x		x						
D.C.															
Catholic U. of America	x	x	x	x					x						
Delaware															
U. of Delaware	x	x	x	x		x							x	x	x
Florida															
U. of Florida	x	x	x	x		x	x		x				x		
U. of Miami	x	x	x	x		x			x				x		
Georgia															
Georgia Inst. of Tech.	x				x			x					x*	x	x
U. of Ga.	1	x	x			x			x				x		
Hawaii															
U. of Hawaii	x	x	x	x	x	x		x					x		x
Idaho															
U. of Idaho	x	x				x			x				x		

(49 States, 113 Institutions)	Other Characteristics														
	Civil Engineering (Masters +)	Education (Masters +)	Psychology (PhD)	Physiology (Masters +)	Public Administration (Bachelors +)	Business Administration (Bachelors +)	Medicine (MD & Masters)	Public Health (Masters +)	Law (LLB)	Criminology	Police Training	Police Instruction or Administration	Safety & Traffic Education or Administration	Traffic Engineering	Transportation Engineering
Illinois															
Bradley U.	x					x									
Illinois Inst. of Tech.	x		x	x	x	x									
Northwestern (Traffic Inst.)	x	x	x	x		x	x		x			x	x	x	x
U. of Illinois (Police Train. Inst. & Highway Traffic Safety Ctr.)	x	x	x	x	x	x	x		x		x		x†	x	
Indiana															
Purdue U.	x	x	x										x	x	x
U. of Notre Dame	x	x		x		x			x						
Indiana U. (Dept. of Police Admin.)	2	x	x	x	x	x	x		x			x	x		
Iowa															
Iowa State U. of Sci. & Tech.[3]	x	x	x	x		x							x†	x	x
U. of Iowa	x	x	x	x		x	x		x						
Kansas															
Kansas State U. Agri. & Appl. Sci.	x	x	x	x	x	x							x‡		x
U. of Kansas	x	x	x	x	x	x	x		x					x	x
Kentucky															
U. of Kentucky	x	x	x	x		x	x	x	x				x		x
Louisiana															
Louisiana Polytechnic Inst.	x	x				x							x		
Louisiana State U. & A&M College	x	x	x	x		x	x		x				x‡		
Tulane of Louisiana	x	x	x	x		x	x	x	x						
Maine															
U. of Maine	x	x			x	x			x				x	x	x
Maryland															
U. of Maryland (Safety Educ. Ctr.)	x	x	x	x	x	x	x		x				x‡	x	x
Massachusetts															
Harvard U.	x	x	x	x	x		x	x	x						
Northeastern U.	x	x				x						x			
Mass. Inst. of Tech.	x		x		x	x									
Tufts U.	x		x	x			x		x						x
U. of Mass.	x	x	x			x		x							x
Worcester Poly Tech.	x														

(49 States, 113 Institutions)	Other Characteristics														
	Civil Engineering (Masters +)	Education (Masters +)	Psychology (PhD)	Physiology (Masters +)	Public Administration (Bachelors +)	Business Administration (Bachelors +)	Medicine (MD & Masters)	Public Health (Masters +)	Law (LLB)	Criminology	Police Training	Police Instruction or Administration	Safety & Traffic Education or Administration	Traffic Engineering	Transportation Engineering
Michigan															
Mich. State U. (Highway Traffic Safety Ctr., "Sch. of Police Admin.", "Dept. of State")	x	x	x	x	x	x						x	x†	x	
Mich. Tech. U.	x					x									
U. of Mich.	x	x	x	x	x	x	x	x	x					x	x
Wayne State U.	x	x	x	x	x	x	x		x				x		
Minnesota															
U. of Minn.	x	x	x	x	x	x	x	x	x				x		
Mississippi															
Miss. State U.	x	x				x							x		
U. of Miss.	x	x	x	x	x	x	x		x				x		
Missouri[4]															
U. of Mo.	x	x	x	x	x	x	x	x	x						x
Washington U.	x	x	x		x	x	x		x						
Montana															
Mont. State U. (formerly State Coll.)	x	x				x							x		
Nebraska															
U. of Neb.	x	x	x	x		x	x		x				x‡		x
Nevada															
U. of Nev. (incl. Las Vegas branch)	x	x	x			x							x	x	x
New Hampshire															
U. of N.H.	x	x			x	x									
New Jersey															
Newark College of Engrg.	x														
Princeton U.	x		x												
Rutgers, The State U. (all campuses)	x	x	x	x		x	x (MS)		x						
Stevens Inst. of Tech.	x														
New Mexico															
N.M. State U. (Dept. of Police Sci.)	x	x				x					x				
U. of N.M.	x	x	x			x	x[5]		x				x	x	x

(49 States, 113 Institutions)	Civil Engineering (Masters +)	Education (Masters +)	Psychology (PhD)	Physiology (Masters +)	Public Administration (Bachelors +)	Business Administration (Bachelors +)	Medicine (MD & Masters)	Public Health (Masters +)	Law (LLB)	Criminology	Police Training	Police Instruction or Administration	Safety & Traffic Education or Administration	Traffic Engineering	Transportation Engineering
New York															
CUNY City College	x	x			x	x							x*		
Clarkson College of Tech.	x					x									
Columbia U.	x	x	x	x		x	x	x	x				x		
Cornell U. (Cornell Aeronautical Lab.)[6]	x	x	x	x	x	x	x		x						x
N.Y. U. (Ctr. for Safety Educ.)	x	x	x	x	x	x	x	x	x				x*		
Polytechnic Inst. Brooklyn	x														
Rensselaer Poly. Inst.	x														
Syracuse U.	x	x	x		x	x	x		x						
State U. N.Y. State U. Buffalo	x	x	x	x		x	x		x				x		
North Carolina[7]															
Duke U.	x	x	x	x		x	x		x						
U. of N.C. State U. at Raleigh	x	x		x		x									x
U. of N. Carolina at Chapel Hill (Public Health Sch. and Highway Safety Ctr.)	[8]	x	x	x	x	x	x	x	x				x		
North Dakota															
N.D. State U.	x	x											x‡	x	
U. of N.D.	x	x	x	x	x	x	[9]		x					x	x
Ohio															
Case Inst. of Tech.	x														
Ohio State U. ("TARGET" Program)[10]	x	x	x	x	x	x	x		x				x	x	x
Ohio U.	x	x				x							x	x	x
U. of Cincinnati	x	x	x	x	x	x	x		x		x		x	x	x
U. of Toledo	x	x				x			x					x	x
Oklahoma															
Okla. State U. Agri. & Appl. Sci.	x	x	x	x		x							x		
U. of Okla.	x	x	x	x	x	x	x	x	x				x		
Oregon															
Oregon State U.	x	x		x		x							x		x

(49 States, 113 Institutions)	Other Characteristics														
	Civil Engineering (Masters +)	Education (Masters +)	Psychology (PhD)	Physiology (Masters +)	Public Administration (Bachelors +)	Business Administration (Bachelors +)	Medicine (MD & Masters)	Public Health (Masters +)	Law (LLB)	Criminology	Police Training	Police Instruction or Administration	Safety & Traffic Education or Administration	Traffic Engineering	Transportation Engineering
Pennsylvania															
Carnegie Inst. of Tech.	x		x			x									
Drexel Inst. of Tech.	x					x									
Lehigh U.	x	x				x									
Pa. State U. (Inst. of Public Safety)	x	x	x		x						x	x	x	x	x
U. of Pa.	x	x	x	x	x	x	x		x						x
U. of Pittsburgh	x	x	x		x	x	x	x	x				x*		
Villanova U.	x					x			x						
Rhode Island															
Brown U.	x	x	x												
U. of R.I.	x	x		x	x									x	x
South Carolina															
Clemson U.	x					x									
U. of S.C.	x	x	x	x		x			x				x	x	x
South Dakota															
S.D. Sch. Mines & Tech.	x														
S.D. State U.	x	x		x									x		
Tennessee															
U. of Tenn.	x	x	x	x		x	x		x				x	x	x
Vanderbilt U.	x		x	x			x		x						
Texas															
Rice U.	x														
So. Meth. U.	x					x			x					x	
Texas A&M U. (Texas Trans. Inst.)	x	x		x		x							x†		
Texas Tech. Coll.	x	x	x		x	x							x	x	
U. of Texas	x	x	x	x	x	x	x		x					x	
Utah															
U. of Utah	x	x	x	x		x	x		x				x	x	x
Utah State U.	x	x		x		x		x					x‡		
Virginia															
Va. Polytech. Inst.	x	x			x	x									
U. of Va. (Va. Highway Research Council)	x	x	x	x		x	x		x				x	x	x
Washington															
U. of Wash (Summer Inst. for Traffic Safety--In-Service Train.)	x	x	x	x	x	x	x	x	x				x	x	x

	Other Characteristics														
(49 States, 113 Institutions)	Civil Engineering (Masters +)	Education (Masters +)	Psychology (PhD)	Physiology (Masters +)	Public Administration (Bachelors +)	Business Administration (Bachelors +)	Medicine (MD & Masters)	Public Health (Masters +)	Law (LLB)	Criminology	Police Training	Police Instruction or Administration	Safety & Traffic Education or Administration	Traffic Engineering	Transportation Engineering
West Virginia															
W.Va. U.	x	x	x	x			x		x				x*	x	
Wisconsin															
U. of Wis. Madison (Safety Res. & Educ. Program)	x	x	x	x	x	x	x		x				x*	x	x
Wyoming															
U. of Wyoming	x	x	x			x			x				x	x	

* Has graduate major or minor program in safety.
† Has graduate and undergraduate major or minor program in safety.
‡ Has undergraduate major or minor program in safety.
1 University of Georgia only offers agricultural engineering, but is included to complement qualifications of Georgia Tech.
2 Indiana University is included because of its many qualifications other than civil engineering.
3 Iowa State University is presently in process of establishing a traffic safety center.
4 Central Missouri State College has an undergraduate and graduate minor/major safety program and specializes in law enforcement. Did not qualify for this list due to absence of required programs of a masters in civil engineering, a doctorate in psychology and a masters in physiology.
5 University of New Mexico offers a 2 year basic medical program without a degree. Completion of the MD would require transfer to a 4 year medical school.
6 Cornell Aeronautical Lab. specializes in transportation research.
7 North Carolina State University has a highway research program but did not qualify for this list due to lack of programs in the first 4 criteria.
8 University of North Carolina at Chapel Hill limits its engineering program to sanitation engineering, but is included due to its many other qualifications. The Public Health School specializes in accident control and research.
9 University of North Dakota offers a 2 year medical program with a BS in medicine.
10 Ohio State's "TARGET" program is a highway safety teaching program with a research orientation.

POSSIBLE CANDIDATE INSTITUTIONS FOR HIGHWAY SAFETY MANPOWER DEVELOPMENT AND RESEARCH CENTERS

(Second Level of Selection with Five Basic Characteristics)

University Level Institutions with Degree Granting Authority: • at Ph.D. Level in any Field • at M.S. Level in Civil Engineering • at M.S. Level in Education • at Doctor's Level or Above in Psychology • At M.S. Level or Above in Physiology (36 States, 52 Institutions)	Other Characteristics														
	Civil Engineering (Masters +)	Education (Masters +)	Psychology (PhD)	Physiology (Masters +)	Public Administration (Bachelors +)	Business Administration (Bachelors +)	Medicine (MD & Masters)	Public Health (Masters +)	Law (LLB)	Criminology	Police Training	Police Instruction or Administration	Safety & Traffic Education or Administration	Traffic Engineering	Transportation Engineering
Alabama															
U. of Alabama	x	x	x	x		x	x		x				x	x	
Arkansas															
U. of Arkansas	x	x	x	x	x	x	x		x						
California															
#Stanford U.	x	x	x	x		x	x		x				x		x
U. of Calif. (all campuses) (UCLA-Inst. of Trans. & Traf. Engr.)	x	x	x	x	x	x	x	x	x	x				x	x
#U. of So. Calif.	x	x	x	x	x	x	x		x						x
Colorado															
Colo. State U.	x	x	x	x									x		
U. of Colo.	x	x	x	x	x	x	x		x						
Connecticut															
U. of Conn.	x	x	x	x	x	x	x		x						
D.C															
#Catholic U. of America	x	x	x	x					x						
Delaware															
U. of Delaware	x	x	x	x		x							x	x	x
Florida															
U. of Florida	x	x	x	x		x	x		x				x		
#U. of Miami	x	x	x	x		x			x				x		
Hawaii															
U. of Hawaii	x	x	x	x	x	x		x					x		x
Illinois															
#Northwestern (Traf. Inst.)	x	x	x	x		x	x		x			x	x	x	x
U. of Ill. (Police Train. Inst. & Highway Traf. Safety Ctr.)	x	x	x	x	x	x	x		x		x		x*	x	
Iowa															
Iowa State U. of Sci. & Tech.¹	x	x	x	x		x							x†	x	x
U. of Iowa	x	x	x	x		x	x		x						
Kansas															
Kan. State U. Agri. & Applied Sci.	x	x	x	x	x	x							x‡		x
U. of Kansas	x	x	x	x	x	x	x		x					x	x

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(36 States, 52 Institutions)	Other Characteristics														
	Civil Engineering (Masters +)	Education (Masters +)	Psychology (PhD)	Physiology (Masters +)	Public Administration (Bachelors +)	Business Administration (Bachelors +)	Medicine (MD & Masters)	Public Health (Masters +)	Law (LLB)	Criminology	Police Training	Police Instruction or Administration	Safety & Traffic Education or Administration	Traffic Engineering	Transportation Engineering
Kentucky															
U. of Kentucky	x	x	x	x		x	x	x	x				x		x
Louisiana															
La. State U. & A&M College	x	x	x	x		x	x		x				x‡		
#Tulane of La.	x	x	x	x		x	x	x	x						
Maryland															
U. of Md. (Safety Educ. Ctr.)	x	x	x	x	x	x	x		x				x‡	x	x
Massachusetts															
#Harvard U.	x	x	x	x	x		x	x	x						
Michigan															
Mich. State U. (Highway Traf. Safety Ctr. and Sch. of Police Admin. and "Dept. of State")	x	x	x	x	x	x						x	x†	x	
U. of Mich.	x	x	x	x	x	x	x	x	x					x	x
Wayne State U.	x	x	x	x	x	x	x		x				x		
Minnesota															
U. of Minn.	x	x	x	x	x	x	x	x	x				x		
Mississippi															
U. of Miss.	x	x	x	x	x	x	x		x				x		
Missouri															
U. of Mo.	x	x	x	x	x	x	x	x	x						x
Nebraska															
U. of Neb.	x	x	x	x		x	x		x				x‡		x
New Jersey															
Rutgers, The State U. (all campuses)	x	x	x	x		x	x (MS)		x						
New York															
#Columbia U.	x	x	x	x		x	x	x	x				x		
#Cornell U. (Cornell Aeronautical Lab.[2])	x	x	x	x	x	x	x		x						x
N.Y. U. (Ctr. for Safety Educ.)	x	x	x	x	x	x	x	x	x				x*		
S.U.N.Y State U. Buffalo	x	x	x	x		x	x		x				x		
North Carolina															
#Duke U.	x	x	x	x		x	x		x						
U. of N.C. at Chapel Hill (Public Health Sch. and Highway Safety Ctr.)	[3]	x	x	x	x	x	x	x	x				x		

(36 States, 52 Institutions)	Other Characteristics														
	Civil Engineering (Masters +)	Education (Masters +)	Psychology (PhD)	Physiology (Masters +)	Public Administration (Bachelors -)	Business Administration (Bachelors +)	Medicine (MD & Masters)	Public Health (Masters +)	Law (LLB)	Criminology	Police Training	Police Instruction or Administration	Safety & Traffic Education or Administration	Traffic Engineering	Transportation Engineering
North Dakota															
U. of N.D.	x	x	x	x	x	x	4		x					x	x
Ohio															
Ohio State U. ("TARGET" Program^5)	x	x	x	x	x	x	x		x				x	x	x
U. of Cincinnati	x	x	x	x	x	x	x		x		x		x	x	x
Oklahoma															
Okla. State U. Agri. Appl. Sci.	x	x	x	x		x							x		
U. of Okla.	x	x	x	x	x	x	x	x	x				x		
Pennsylvania															
#U. of Pa.	x	x	x	x	x	x	x		x						x
So. Carolina															
U. of S.C.	x	x	x	x		x			x				x	x	x
Tennessee															
U. of Tenn.	x	x	x	x		x	x		x				x	x	x
Texas															
U. of Texas	x	x	x	x	x	x	x		x					x	
Utah															
U. of Utah	x	x	x	x		x	x		x				x	x	x
Virginia															
U. of Va. (Va. Highway Res. Council)	x	x	x	x		x	x		x				x	x	x
Washington															
U. of Wash. (Summer Inst. for Traf. Safety--In-Service Train.)	x	x	x	x	x	x	x	x	x				x	x	x
West Virginia															
W. Va. U.	x	x	x	x			x		x				x*	x	
Wisconsin															
U. of Wis.-Madison (Safety Res. and Education Program)	x	x	x	x	x	x	x		x				x*	x	x

Notes: Two initial criteria (all schools offering any doctorate program and masters degrees in civil engineering) were used in an effort to obtain a representative sample of schools that might qualify for highway safety research centers. These and the other qualifications were basically determined by degrees conferred and lists of courses or degrees offered as indicated by the ten sources noted on Appendix 4-1.

The 52 schools (11 are private universities) on this list represent 36 states and qualify in all of the first 5 qualifications with the exception of the University of North Carolina at Chapel Hill (See footnote): (1) any doctoral program, (2) masters and above in civil engineering, (3) masters and above in education, (4) at least a doctorate in psychology and (5) masters and above in physiology.

Private university.
* Has graduate major or minor program in safety.
† Has graduate and undergraduate major or minor program in safety.
‡ Has undergraduate major or minor program in safety.
[1] Iowa State University is presently in process of establishing a traffic safety center.
[2] Cornell Aeronautical Lab. specializes in transportation research.
[3] University of North Carolina at Chapel Hill limits its engineering program to sanitation engineering, but is included due to its many other qualifications. The Public Health School specializes in accident control and research.
[4] University of North Dakota offers a 2 year medical program with a BS in medicine.
[5] Ohio States' "TARGET" program is a highway safety teaching program with a research orientation.

Appendix 4-4

POSSIBLE CANDIDATE INSTITUTIONS FOR HIGHWAY SAFETY MANPOWER DEVELOPMENT AND RESEARCH CENTERS

(Third Level of Selection With 5 Basic and 3 Special Characteristics)

Institutions	Characteristics	
	Basic	Special
1. University of California Systems	5	8xx
2. University of Cincinnati	5	8xx
3. University of Washington	5	8xx
4. Northwestern University	5	7xx
5. University of Illinois	5	7x
6. University of Maryland	5	7xx
7. University of Michigan	5	7xx
8. Ohio State University	5	7xx
9. University of Wisconsin (Madison)	5	7xx
10. University of Kansas	5	6xx
11. University of Kentucky	5	6x
12. University of Minnesota	5	6
13. University of Missouri	5	6x
14. New York University	5	6
15. University of North Carolina (Chapel Hill)	5	6
16. University of Oklahoma	5	6
17. University of Tennessee	5	6xx
18. University of Utah	5	6xx
19. University of Virginia	5	6xx
20. University of Alabama	5	5x
21. Stanford University	5	5x
22. University of Southern California	5	5x
23. University of Hawaii	5	5x
24. Michigan State University	5	5x
25. University of Nebraska	5	5x
26. Cornell University	5	5x
27. University of North Dakota	5	5xx
28. University of Pennsylvania	5	5x
29. University of South Carolina	5	5xx
30. University of Texas	5	5x
31. University of Delaware	5	4xx
32. Iowa State University	5	4xx
33. Kansas State University	5	4x
34. West Virginia University	5	4x

x = Including either Traffic or Transportation Engineering.
xx = Including Traffic and Transportation Engineering.

POSSIBLE CANDIDATE INSTITUTIONS FOR HIGHWAY SAFETY MANPOWER DEVELOPMENT AND RESEARCH CENTERS

(Relative Ranking of Individual Institutions by Percent of Optimum Criteria)

Appendix 4-5

University Level Institutions With Degree Granting Authority: • at Ph.D Level in any Field • at M.S. Level in Civil Engineering by States (49 States, 113 Institutions)	Basic Disciplines							
	Engineering	Police Sciences	Business or Public Administration	Education	Medicine	Law	Psychology	Total Percent of Optimum Criteria
Percent by Discipline	26		17	23	6	6	6	100
Alabama								
Auburn U.	26			23				49
U. of Alabama	26			23	6	6	6	67
Alaska								
U. of Alaska (No Ph.D. Prog.)	26			23			6	55
Arizona								
Arizona State U.	26		17	23†			6	72
U. of Arizona	26		17	23		6	6	78
Arkansas								
U. of Arkansas	26		17	23	6	6	6	84
California								
#Calif. Inst. of Tech.	26							26
San Jose State	26	16	17	23				82
#Stanford U.	26			23	6	6	6	67
U. Calif. (all campuses) (UCLA-Inst. of Trans. & Traffic Engr.)	26		17	23	6	6	6	84
#U. So. Calif.	26		17	23	6	6	6	84
Colorado								
Colorado State U.	26			23			6	55
U. of Colorado	26		17	23	6	6	6	84
Connecticut								
U. of Connecticut	26		17	23	6	6	6	84
D.C.								
#Catholic U. of America	26			23		6	6	61
Delaware								
U. of Delaware	26			23			6	55
Florida								
U. of Florida	26			23	6	6	6	67
#U. of Miami	26			23		6	6	61
Georgia								
Georgia Inst. of Tech.	26		17	*				43
U. of Ga.	1/			23		6	6	35

University Level Institutions With Degree Granting Authority: ● at Ph.D Level in any Field ● at M.S. Level in Civil Engineering by States (49 States, 113 Institutions)	Basic Disciplines	Engineering	Police Sciences	Business or Public Administration	Education	Medicine	Law Psychology	Total Percent of Optimum Criteria
Hawaii								
U. of Hawaii	26		17	23			6	72
Idaho								
U. of Idaho	26			23		6		55
Illinois								
#Bradley U.	26							26
#Illinois Inst. of Tech.	26		17				6	49
#Northwestern (Traffic Inst.)	26	16		23	6	6	6	83
U. of Illinois (Police Train. Inst.) & Highway Traffic Safety Ctr.)	26	16	17	23†	6	6	6	100
Indiana								
Purdue U.	26			23			6	55
#U. of Notre Dame	26			23		6		55
Indiana U. (Dept. of Police Admin.)	2/	16	17	23	6	6	6	74
Iowa								
Iowa State U. of Sci. & Tech. 3/	26			23†			6	55
U. of Iowa	26			23	6	6	6	67
Kansas								
Kansas State U. Agri & Appl. Sci.	26		17	23‡	6		6	72
U. of Kansas	26		17	23	6	6	6	84
Kentucky								
U. of Kentucky	26			23	6	6	6	67
Louisiana								
Louisiana Polytechnic Inst.	26			23				49
Louisiana State U. & A&M College	26			23‡	6	6	6	67
#Tulane of Lousiana	26			23	6	6	6	67
Maine								
U. of Maine	26		17	23		6		72
Maryland								
U. of Maryland (Safety Educ. Ctr.)	26		17	23‡	6	6	6	84

Appendix 4-5 (Cont)

University Level Institutions With Degree Granting Authority: ● at Ph.D Level in any Field ● at M.S. Level in Civil Engineering by States (49 States, 113 Institutions)	Basic Disciplines	Engineering	Police Sciences	Business or Public Administration	Education	Medicine	Law	Psychology	Total Percent of Optimum Criteria
Massachusetts									
#Harvard U.	26		17	23	6	6	6		84
#Northeastern U.	26	16		23					65
#Mass. Inst. of Tech.	26		17				6		49
#Tufts U.	26				6	6	6		44
U. of Mass.	26			23			6		55
#Worcester Poly Tech.	26								26
Michigan									
Mich. State U. (Highway Traffic Safety Ctr., "Sch. of Police Admin.", "Dept. of State")	26	16	17	23[†]			6		88
Mich. Tech. U.	26								26
U. of Mich.	26		17	23	6	6	6		84
Wayne State U.	26		17	23	6	6	6		84
Minnesota									
U. of Minn.	26		17	23	6	6	6		84
Mississippi									
Miss. State U.	26			23					49
U. of Miss.	26		17	23	6	6	6		84
Missouri[4/]									
U. of Mo.	26		17	23	6	6	6		84
#Washington U.	26		17	23	6	6	6		84
Montana									
Mont. State U. (fo-merly State Coll.)	26			23					49
Nebraska									
U. of Neb.	26			23[‡]	6	6	6		67
Nevada									
U. of Nev. (incl. Las Vegas branch)	26			23			6		55
New Hampshire									
U. of N.H.	26		17	23					66

Appendix 4-5 (Cont)

University Level Institutions With Degree Granting Authority: • at Ph.D Level in any Field • at M.S. Level in Civil Engineering by States (49 States, 113 Institutions)	Basic Disciplines	Engineering	Police Sciences	Business or Public Administration Education	Medicine	Law	Psychology	Total Percent of Optimum Criteria
New Jersey								
Newark College of Engrg.	26							26
#Princeton U.	26						6	32
#Rutgers, The State U. (all campuses)	26			23	6	6	6	67
#Stevens Inst. of Tech.	26							26
New Mexico								
N.M. State U. (Dept. of Police Sci.)	26	16		23				65
U. of N.M.	26			23	[5]	6	6	61
New York								
CUNY City College	26		17	23*				66
#Clarkson College of Tech.	26							26
#Columbia U.	26			23	6	6	6	67
#Cornell U. (Cornell Aeronautical Lab.)[6]	26		17	23	6	6	6	84
#N.Y. U. (Ctr. for Safety Educ.)	26		17	23*	6	6	6	84
#Polytechnic Inst. Brooklyn	26							26
#Rensselaer Poly. Inst.	26							26
#Syracuse U.	26		17	23	6	6	6	84
State U. N.Y. State U. Buffalo	26			23	6	6	6	67
North Carolina[7]								
#Duke U.	26			23	6	6	6	67
U. of N.C. State U. at Raleigh	26			23				49
U. of N. Carolina at Chapel Hill (Public Health Sch. and Highway Safety Ctr.)	26[8]		17	23	6	6	6	84
North Dakota								
N.D. State U.	26			23‡				49
U. of N.D.	26		17	23	[9]	6	6	78
Ohio								
#Case Inst. of Tech.	26							26
Ohio State U. ("TARGET" Program)[10]	26		17	23	6	6	6	84
Ohio U.	26			23				49
U. of Cincinnati	26	16	17	23	6	6	6	100
U. of Toledo	26			23		6		55

Appendix 4-5 (Cont)

University Level Institutions With Degree Granting Authority: ● at Ph.D Level in any Field ● at M.S. Level in Civil Engineering by States (49 States, 113 Institutions)	Basic Disciplines Engineering	Police Sciences	Business or Public Administration	Education	Medicine	Law	Psychology	Total Percent of Optimum Criteria
Oklahoma								
Okla. State U. Agri. & Appl. Sci. (Southwest Ctr. for Safety Educ. & Research)	26			23			6	55
U. of Okla	26		17	23	6	6	6	84
Oregon								
Oregon State U.	26			23				49
Pennsylvania								
#Carnegie Inst. of Tech.	26						6	32
#Drexel Inst. of Tech.	26							26
#Lehigh U.	26			23				49
Pa. State U. (Inst. of Public Safety)	26	16	17	23			6	88
#U. of Pa.	26		17	23	6	6	6	84
#U. of Pittsburgh	26		17	23*	6	6	6	84
#Villanova U.	26					6		32
Rhode Island								
#Brown U.	26			23			6	55
U. of R.I.	26		17	23				66
South Carolina								
Clemson U.	26							26
U. of S.C.	26			23		6	6	61
South Dakota								
S.D. Sch. Mines & Tech.	26							26
S.D. State U.	26			23				49
Tennessee								
U. of Tenn.	26			23	6	6	6	67
#Vanderbilt U.	26				6	6	6	44
Texas								
#Rice U.	26							26
#So. Meth. U.	26					6		32
Texas A&M U. (Texas Trans. Inst.)	26			23†				49
Texas Tech. Coll.	26		17	23			6	72
U. of Texas	26		17	23	6	6	6	84

Appendix 4-5 (Concluded)

University Level Institutions With Degree Granting Authority: ● at Ph.D Level in any Field ● at M.S. Level in Civil Engineering by States (49 States, 113 Institutions)	Basic Disciplines							
	Engineering	Police Sciences	Business or Public Administration	Education	Medicine	Law	Psychology	Total Percent of Optimum Criteria
Utah								
U. of Utah	26			23	6	6	6	67
Utah State U.	26			23‡				49
Vermont								
U. of Vermont (has Ph.D program)	26			23	6			55
Virginia								
Va. Polytech. Inst.	26		17	23				66
U. of Va. (Va. Highway Research Council)	26			23	6	6	6	67
Washington								
U. of Wash (Summer Inst. for Traffic Safety--In-Service Train.)	26		17	23	6	6	6	84
West Virginia								
W. Va. U.	26			23	6	6	6	67
Wisconsin								
U. of Wis. Madison (Safety Res. & Educ. Program)	26		17	23	6	6	6	84
Wyoming								
U. of Wyoming	26			23		6	6	61

# Privately controlled schools.

* Has graduate major or minor program in safety.

† Has graduate and undergraduate major or minor program in safety.

‡ Has undergraduate major or minor program in safety.

1 University of Georgia only offers agricultural engineering, but is included to complement qualifications of Georgia Tech.

2 Indiana University is included because of its many qualifications other than civil engineering.

3 Iowa State University is presently in process of establishing a traffic safety center.

4 Central Missouri State College has an undergraduate and graduate minor/major safety program and specializes in law enforcement. Did not qualify for this list due to absence of required programs of a masters in civil engineering, a doctorate in psychology and a masters in physiology.

5 University of New Mexico offers a 2-year basic medical program without a degree. Completion of the MD would require transfer to a 4-year medical school.

6 Cornell Aeronautical Lab. specializes in transportation research.

7 North Carolina State University has a highway research program but did not qualify for this list due to lack of programs in the first 4 criteria.

8 University of North Carolina at Chapel Hill limits its engineering program to sanitation engineering, but is included due to its many other qualifications. The Public Health School specializes in accident control and research.

9 University of North Dakota offers a 2-year medical program with a BS in medicine.

10 Ohio State's "TARGET" program is a highway safety teaching program with a research orientation.

Sources: Booz, Allen & Hamilton Inc., Safety Specialist Manpower: Manpower Training, Volume III, BAH, Washington, D.C., Contract FH-11-6496, National Highway Safety Bureau, U.S. Department of Transportation, Washington, D.C., October 14, 1968.

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Carter, Allan M., ed., American Universities and Colleges, 9th edition, New York: American Council on Education, 1964.

Harmon, Lindsey R. and Herbert Soldz, Doctorate Production in United States Universities 1920-1962: With Baccalaureate Origins of Doctorates in Science, Arts, and Professions, Publication No. 1142, Washington, D.C.: National Academy of Sciences--National Research Council, 1963. 215 pp.

Hawes, Gene R., The New American Guide to Colleges, third edition, New York: Columbia University Press, 1966. 597 pp.

Health, Education and Welfare, U.S. Department of, Office of Education, Division of Educational Statistics, Wayne E. Tolliver, Enrollment for Advanced Degrees, Fall 1960, Circular No. 674, OE-54019-60, Washington, D.C.: U.S. Government Printing Office, 1963. 485 pp.

Health, Education and Welfare, U.S. Department of, Office of Education, National Center for Educational Statistics, Enrollment for Master's and Higher Degrees, Fall 1964, Final Report, OE-54019-64, Washington, D.C.: U.S. Government Printing Office, 1966. 96 pp.

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Health, Education and Welfare, U.S. Department of, Office of Education, Wayne E. Tolliver, Earned Degrees Conferred 1961-1962: Bachelor's and Higher Degrees, Circular No. 719, OE-54013-62, Washington, D.C.: U.S. Government Printing Office, 1963. 235 pp.

National Safety Council, Higher Education Section, College & University Safety Courses, Chicago, NSCHE, 1968. 68 pp.

Appendix 5

VISITS TO CANDIDATE UNIVERSITIES

Appendix 5-1

STANFORD RESEARCH INSTITUTE

MENLO PARK, CALIFORNIA 94025

President ______________
University of __________
____

Dear President __________:

This letter is to request your permission to visit the University of __________ to discuss training, education, and research in highway safety.

Stanford Research Institute (SRI) is under contract with the National Highway Safety Bureau (NHSB) of the U. S. Department of Transportation, to study alternate plans for meeting the Nation's need for trained highway safety manpower. The requirements for large numbers of personnel trained in numerous highway safety related occupations has been documented as the result of a recent nationwide study sponsored by the NHSB.

One of the plans being studied by SRI is that of establishing federally supported university-based regional Centers possessing a capability for providing training for a broad range of occupations. Information gathered during visits to a representative sample of universities will be used to test the feasibility of the regional Center concept, to identify regional Center administrative requirements, and to formulate guidelines for Center operations.

We will appreciate the opportunity to discuss this subject with you and with members of your faculty and administrative staff. Team visits and interviews not to exceed one day will be conducted sometime within the next several weeks. Our team will consist of representatives from both SRI and NHSB. If you agree to our visit, arrangements will be made by telephone with you or your designated representative regarding a convenient date.

For additional information, please contact the Project Leader: Dr. Maury H. Chorness, Stanford Research Institute, Menlo Park, California, telephone number (415) 326-6200, extension 4553.

Sincerely yours,

STANFORD RESEARCH INSTITUTE

MENLO PARK, CALIFORNIA 94025

Appendix 5-2

Dr. ______________, Director
____
University of ______________
____

Dear Dr. :

Thank you for making arrangements for the visit of an SRI/NHSB team to your university. We plan to arrive about ______________ on ________________ and will be available for meetings from about ____________ to ____________ on ________________.

We have discussed the kinds of university representatives who might be interested in the proposed Highway Safety Manpower Development and Research Centers. These could include: the Provost; Vice-Presidents of Research, Administration, Academic Affairs, etc.; Deans for respective Schools of Engineering, Education, Law, Public Health, Medicine, Public or Business Administration, and Continuing or Non-Resident Instruction; Representatives of Traffic and Transportation Engineering, Police Sciences, Psychology, Driver Education, and Highway Safety. We leave it with the university to determine where the pattern of interests lies among its faculty and staff.

Generally, we have begun with a briefing on NHSB, the highway safety problem, and the need for development of safety manpower. A presentation of the SRI study in progress then follows. In some instances, the two presentations have scheduled at a time during the day when a greater number of interested people would be present, including those who would be hearing about the proposed Centers for the first time. Also, we have found that our discussants fall roughly into two groups -- a core group which remains with us on a relatively enduring basis, and others who come in for interpolated periods of discussion and then return to their busy schedules. Again, we leave it to the university to develop its own program for the day.

Copies of general topics which NHSB has requested that we cover are enclosed. It would be most helpful if they could be reproduced in greater number and distributed in advance to those planning to enter the discussions.

Our party will consist of myself and ______________________, of the Office of Safety Manpower Development, NHSB. For purposes of the NHSB briefing, we would appreciate having a 35-millimeter slide projector available with carrousel. We are looking forward to our visit with you.

Sincerely,

Enclosure: Topics for Conference Discussion on
Highway Safety Manpower Development
and Research Centers (4 copies)

Appendix 5-3

STANFORD RESEARCH INSTITUTE

THE FEASIBILITY OF ESTABLISHING HIGHWAY SAFETY MANPOWER DEVELOPMENT AND RESEARCH CENTERS AT UNIVERSITY-LEVEL INSTITUTIONS

Outline of Study

(Conducted for Office of Safety Manpower Development, NHSB)

Main Requirements of the NHSB Study

1. To develop a program strategy for the placement of HSMD & R Centers.
2. To identify a candidate list of colleges, universities, or consortia, with qualifications for operating HSMD & R Centers.
3. To develop guidelines for establishment and operation of HSMD & R Centers.
4. To develop program controls for NHSB management purposes in measuring and maintaining program effectiveness.

Basic Areas of Study

1. Skills and background disciplines required in highway safety job specialites.

   Earlier study by Booz-Allen for NHSB

      Definition of 36 general job categories from several hundred specialties

      Prerequisite education, training, and experience

      Entry and refresher training requirements

      Number of positions needing to be filled at state and local levels.

   Augmentation of Booz-Allen projections of manpower needs

      For Federal Government operation

         Projected National Highway Safety R&D Center

      Typical example of estimated manpower needs (see attached)

   Analysis of course descriptions for 36 generalized job specialties to determine:

      Training content

      Duration of courses (hours)

      Allocations to entry and refresher training

      Periodicity of refresher training (every two years, three years, etc.)

      Academic disciplines required to support training and education in each specialty

      Faculty requirements according to involved disciplines

   A typical training requirement for a job specialty (see attached)

      Police Traffic Services - Patrolman

2. Study of alternatives for optimal placement of Centers (based upon 1973 and 1978 requirements).

   Alternative strategies under study

ESTIMATED 1968 MANPOWER NEEDS

	Local	State	Federal
Planning & Administration	1,229	171	1,600
Motor Vehicle Inspection		911	
Driver Education		14,007	
Driver Licensing		3,051	
Codes & Laws	359	50	
Traffic Courts	9,972	1,388	
Alcohol in Highway Safety	18,545	2,201	
Identification & Surveillance of Accident Locations	2,537	2,511	
Traffic Records	1,078	150	
Emergency Medical Services	37,510	257	
Highway Design, Construction and Maintenance	2,398	2,374	
Traffic Control Devices	1,808	1,790	
Pedestrian Safety	359	50	
Police Traffic Services	330,315	39,204	
Accident Cleanup	33,759	3,751	
School Bus Safety	271,621	468	
Research Programs		99	1,228
LEVEL OF GOV'T TOTALS	711,490	72,173	2,828
GRAND TOTAL			786,491

Typical Training Requirement for a Job Specialty

	Entry Training		Refresher Training		Percent of Total Training Hours by Discipline						
Generalized Job Title	Course Description	No. of Hours	Course Description	No. of Hours	Law	Medicine	Public or Bus. Admin.	Education	Police Sciences	Engineering	Psychology
32. Police Traffic Services Patrolman	A. Accident Investigation and reporting	10	A. A review of Instruction in Advanced Patrol Techniques, Accident Prevention Measures, First Aid, and Supervising Techniques for Non-Commissioned Officers	20 annually	14	7		36	43		
	B. Accident Prevention	20									
	C. Motor Vehicle Code	20									
	D. Traffic Direction and Control	30									
	E. Defensive and Pursuit Driving	30									
	F. Patrol Techniques	20									
	G. First Aid	10									

- Regional University Centers retaining all functions
- Regional University Centers with functions shared among other universities, such as driver education and police training
- Regional (University Consortia) with similar allocations
- State-level Centers
- National University-based Center embracing all programs
- National University-based Center embracing only education and research--training allocated to a Federal academy

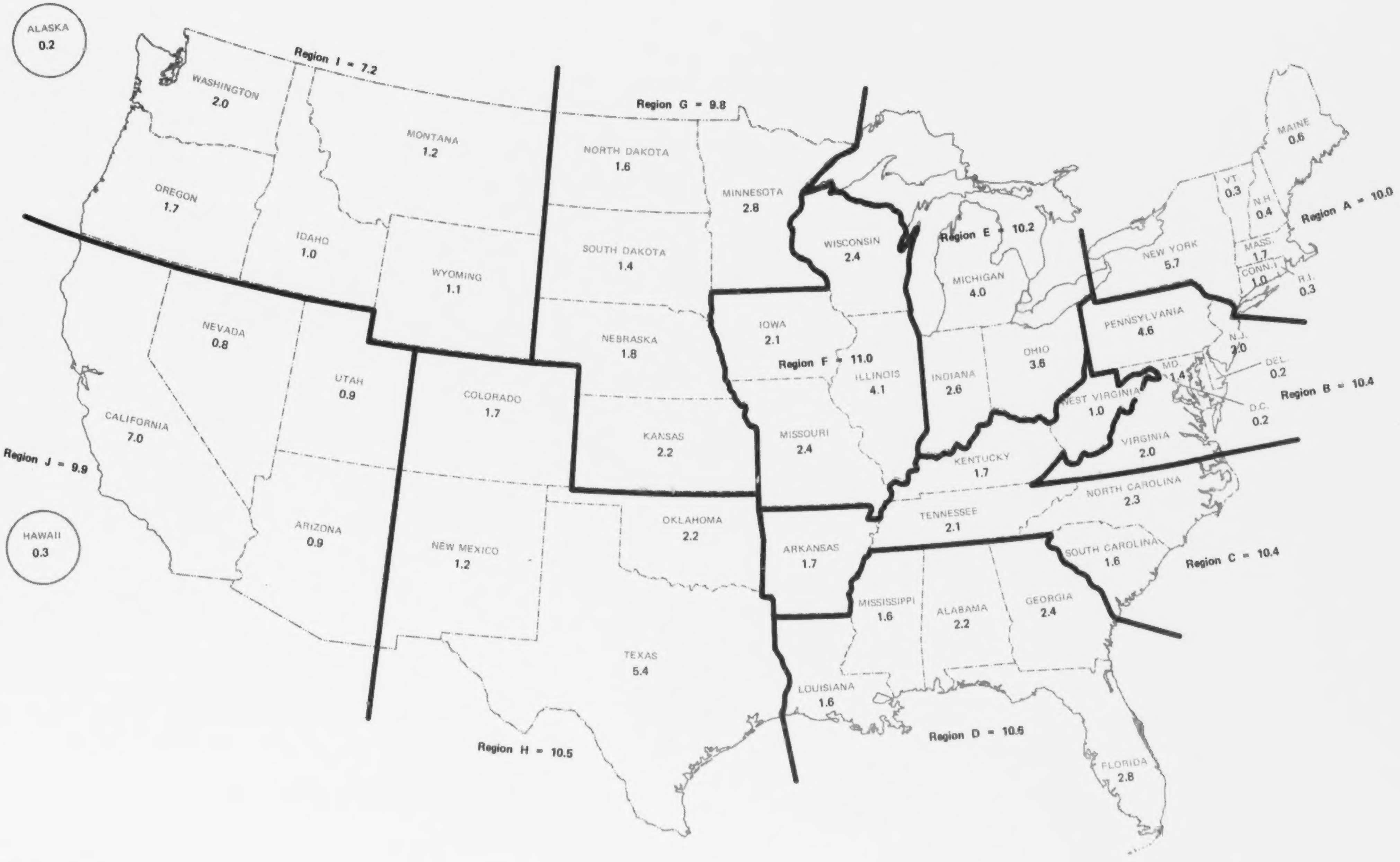
Background study to alternative strategies

- Other analogous government programs (examples)
  - Federal executive development program
  - Mid-career development of Federal employees
  - USOE educational R&D centers
  - TARGET
  - Federal funding for training of educational researchers
  - FAA Academy
- University-initiated programs
  - Traffic and transportation
  - Driver education
  - Highway safety research centers
  - Nonresident instruction

Preliminary estimates of funding, personnel and operating requirements (see attached)

Criteria for regionalization of the U.S.

- Safety manpower requirements on national basis as a function of:


ALASKA 0.2
HAWAII 0.3
Region I = 7.2
Region G = 9.8
Region A = 10.0
Region E = 10.2
Region F = 11.0
Region B = 10.4
Region C = 10.4
Region D = 10.6
Region H = 10.5
Region J = 9.9
WASHINGTON 2.0
OREGON 1.7
CALIFORNIA 7.0
IDAHO 1.0
NEVADA 0.8
MONTANA 1.2
WYOMING 1.1
UTAH 0.9
ARIZONA 0.9
COLORADO 1.7
NEW MEXICO 1.2
NORTH DAKOTA 1.6
SOUTH DAKOTA 1.4
NEBRASKA 1.8
KANSAS 2.2
OKLAHOMA 2.2
TEXAS 5.4
MINNESOTA 2.8
IOWA 2.1
MISSOURI 2.4
ARKANSAS 1.7
LOUISIANA 1.6
WISCONSIN 2.4
ILLINOIS 4.1
MICHIGAN 4.0
INDIANA 2.6
OHIO 3.6
KENTUCKY 1.7
TENNESSEE 2.1
MISSISSIPPI 1.6
ALABAMA 2.2
GEORGIA 2.4
FLORIDA 2.8
SOUTH CAROLINA 1.6
NORTH CAROLINA 2.3
VIRGINIA 2.0
WEST VIRGINIA 1.0
PENNSYLVANIA 4.6
MD 1.4
D.C. 0.2
DEL. 0.2
N.J. 2.0
NEW YORK 5.7
CONN. 1.0
R.I. 0.3
MASS. 1.7
VT 0.3
N.H. 0.4
MAINE 0.6

GEOGRAPHICAL DISTRIBUTION OF STATE AND LOCAL MANPOWER REQUIREMENTS BY STATES AND REGIONS—percent

PRELIMINARY ESTIMATES OF PERSONNEL AND FUNDING FOR ALTERNATIVE STRATEGIES UNDER STUDY FOR HSMD&R CENTERS

I. General Considerations:

A. Student/teacher ratio of 6.62 to 1.
B. Teaching load of 20 students per class and 4 students per lab-type class;
C. Full professor to other faculty ratio of 1:1.9, in accordance with NSF study, graduate student support and manpower resources in graduate student education, 1965/66;
D. Faculty average salaries based on "Report on the Self-Grading Compensation Survey, 1966/67," by the American Association of University Professors;
E. Provision for research facilities and HSMD & R center staff.

II. Alternate Strategies (5-Year Plan)

	Personnel			Costs in 1973		
Type of Center	FTE Students	FTE Faculty	Center Staff	Payroll Incl. 50%* Overhead	Other Annual Operating Costs†	Initial Investment
1. Small State Center	66	10	10	$ 440,310	$ 56,800	$ 512,200 **
2. Medium State Center	146	22	16	877,701	113,500	1,133,000
3. Large State Center	179	27	21	1,108,130	143,000	1,389,000
4. Regional Center	252	38	21	1,389,240	179,200	1,955,500
5. Regional Center (excl. driver education and police training)	225	34	17	1,207,425	155,000	1,746,000
6. Consortium	252	38	25	1,468,884	190,000	1,955,500
7. Consortium (excl. driver education and police training)	225	34	20	1,265,559	163,000	1,746,000
8. National Center (University)	2,516	380	50	10,670,265	1,380,000	19,524,200
9. Federal Academy (training only)	2,118	320	215	9,949,398	2,010,000	20,925,800 ***

---

* 33% for the Academy.

† 12.9% of payroll and O/H (20.20% for Academy).

** $7,760 per FTE student

*** $9,880 per FTE student

Number of political subdivisions

Number of road miles

Number of registered vehicles

Current regionalization is based upon:

10 regions (each encompassing 10%, approximately, of manpower requirements

Traditional national regionalization considerations (BPR, USOE, Department of Agriculture, success and failure of recently regionalized Federal programs)

Functional problems of travel, availability of universities

Maintenance of state integrity

Considerations for NHSB administration and coordination

Feasibility of establishing Pilot Centers (study elements)

Criteria for site selection

Funding required

Experimentation with mission and method of operation

Functioning as a test-bed for validation of concepts and approaches developed in main study

Innovations, applications of new educational technology to short course instruction, imparting of instructor capabilities (through video taped sequences, etc.)

"Start-up" milestones and problems

3. Development of selection criteria for candidate university institutions

Degree granting capabilities; i.e., whether a Ph.D. granting institution

Existence of disciplines required to support training, education, and research:

Civil Engineering Public Administration

Education	Business Administration
Psychology	Medicine
Physiology	Law

History of previous involvement in:

Police Sciences

Traffic and Transportation Engineering

Public Health

Implementation of Federally funded training or manpower development programs

General university characteristics:

Accreditation

Research facilities

Student enrollments in related disciplines

Nonresident training programs

Faculty/student ratios

4. University visitation for purposes of:

Familiarizing university personnel with NHSB-generated study being conducted by SRI

Exchanging ideas on problems perceived in establishing Centers for Highway Safety Manpower Development and Research at universities

Discussing relevant information on finances, faculty and student recruitment, governmental coordination, interdisciplinary requirements, guidelines for operating Centers, etc.

Ascertaining general university responsiveness to establishing Centers

Determining assurances required by university prior to establishing Centers

5. Development of guidelines for administration and operation of Centers

   Defining milestone items during "start-up"

      Program planning

      Faculty recruitment

      Student recruitment

      Curriculum definition and development

      Construction or provision of facilities

      Output (graduation) rates during buildup phase

   Defining guidelines on continuing operation for:

      Placement of Center in university organizational structure

      Administrative relationships between university and Center

      Funds accountability

      Reporting requirements into NHSB

      Annual programming and funds justification

      Coordination with other educational institutions as in the case of consortia

      Coordination with the field environment to determine success of graduates, viability of curriculum, training needs

      Meeting interdisciplinary requirements for training, graduate education and research

6. Development of program controls and evaluation of program effectiveness to assist NHSB in:

   Insuring relevancy of training for field requirements and NHSB program standards

   Determining effectiveness of graduates, and others completing short courses, in the field environment

   Updating of manpower needs and insuring that Centers provide the required training

Measuring outcomes of instructional technologies or new experimental curriculums adopted for specialized training

Effecting realignments in existing curriculums with respect to course content, periodicity of refresher training, etc.

Conducting on-site Center evaluations through procedures which are acceptable to university institutions.

Budget Bureau No. 04-S 69008
Approval expires 12/31/69

Appendix 5-4

STANFORD RESEARCH INSTITUTE
MENLO PARK, CALIFORNIA 94025

PLAN FOR VISITS TO CANDIDATE UNIVERSITIES

Agenda

The following schedule of events is suggested for a "typical" visit and interview.

I. Introduction by NHSB representative

   A. Purpose and organization of DOT, FHWA, NHSB, etc.

   B. Legislation provisions of Highway Safety Program (National Traffic and Motor Vehicle Safety Act of 1966, Highway Safety Act of 1966, etc.)

   C. Plan of NHSB for highway safety manpower development

II. Discussion by SRI representative

   A. Objectives of "Safety Education and Research Centers" project

   B. Methods used and progress to date

   C. Purpose of formal visits (as defined in the contract) is two fold:

      1. To obtain indications of "the willingness of candidate universities to respond to the RFP." This requires an assessment of their motivations toward programs of this type.

      2. To determine where the proposed programs may encounter "potential areas of conflict with the universities." This can best be done by reviewing the past experience of schools in handling similar Federal programs in other fields, in administering other academic programs of a comparable nature, and particularly in developing existing collegiate education and research programs related to highway safety.

Note that no requirement is called for in these vists to establish the qualifications of individual universities to carry out the proposed program. This type of evaluation is more appropriately left to other independent surveys and to the RFP that will be sent to candidate schools.

III. For conference and discussion period

The attached Conference Guide is to be used at the discretion of the NHSB and SRI representatives. It is not necessary that the questions be posed in the exact sequence as shown. The discussion should not take on an interrogative cast, especially where relatively high level university officials will be dealt with. Discussion should be kept informal; also it will probably occur that answers will be forthcoming for many questions which are related to earlier questions or points which stimulate discussion. The questions in each section have been arranged so that those occurring early are general ones in the anticipation that they will open up discussion.

The Conference Guide is divided into the following areas which have been arranged sequentially in the preferred order of discussion:

1. General program considerations
2. "Control" procedures and problems
3. Finances
4. Facilities
5. Faculty
6. Students
7. Curriculum

Note that this is the preferred order of discussion. If a university group should wish to launch immediately into the problems of getting faculty people interested in new Federal programs, the discussion should then include those questions we have included under "Faculty." A return to the preferred order of discussion would occur after discussion upon this point had been exhausted.

It should be noted also that one major expressed purpose of the university visitations will be determining the willingness to undertake a safety education and research mission. Direct "confrontations" of "willing" or "non-willing" should be avoided in discussion, especially where the assembled officials may not be qualified to represent the university or where it is indicated that they simply do not wish to be forced to make a decision about being "willing." In such cases, the degree of "willingness" must be inferred from the content of the discussion.

IDENTIFYING INFORMATION

Name of University: ______________________________

Location: ______________________________________

Date of Conference: ______________________________

University Officials Present:

____

(Name) (University Title)

____

____

____

____

____

NHSB Representative: ______________________________

SRI Representative: _______________________________

CONFERENCE GUIDE

I. Discussion Points on General Program Issues

1. What experience has the university had with Federal programs that provide education and research in other fields? Which programs has it participated in? (Provide list of programs to interviewers)

2. Have these programs enhanced the general educational mission of the university? Have there been any negative effects? If so, have they been out-weighed by the positive aspects?

3. What problems are perceived in the build-up of a new mission at the university? Student recruitment? Faculty? Facilities? Others? (have these explained) Which would be the most critical?

4. How rapid a build-up is envisioned if the university should be desirous of meeting those needs which have been presented on education and research in the safety field?

5. How long a commitment would be desirable for a program of this kind that NHSB wishes to establish? 5-year? ____________ 10-year? ____________ With annual funding? ____________

(Enter comments)

6. Where is it perceived that a Center for Safety Education and Research would be best placed in the university? Some options are: School of Engineering; School of Education, Vice-President for Instruction; Vice-President for Research; School of Public Health; jointly operated consortium among several departments.

7. Does the university have any plans at present to develop programs of research and education in highway safety? If "yes", request a brief explanation.

8. Has the university had any previous experience in coordinating programs with other institutions of higher education? If so, is it aware of any major problems which have arisen in such programs?

9. Based upon its experience in other Federal programs, and the briefing which it has received on the new proposed program, how strong is the interest in undertaking an education and research mission in safety?

10. Is there a willingness to undertake coordination with other universities if it became a Regional Center?

II. Discussion Points on "Control" and Federal Coordination

1. What kinds of Federal programs have been easily administered at the university with respect to reporting procedures, justification for funding, etc.?

2. What kind of review procedures are applied by the Federal government to programs which it funds at the university?

3. What kind of review procedures does the university feel it could function most effectively under? Under what preferred kinds of Federal "control" and coordinating procedures?

4. What is the general attitude or acceptance of government "control" which involves normal procedures of program submission, funding justification, periodic reporting, auditing, review, visits from the concerned government agency, etc.?

III. Discussion Points on Finances

1. Is there a previous history of having matched university funds with Federally funded programs? On what percentage basis?

2. For which of the following purposes would the university wish to justify expenditures of Federal funds? In what crude proportion?

    Construction grants ______

    Equipment grants ______

    General curriculum support ______

    Special demonstration projects in safety ______

Research grants ______

Student scholarships ______

Faculty salaries ______

Other ______________ ______

______________ ______

3. From the briefing information, which has been presented (size of student load, facility requirements, faculty, etc.)? What is perceived as approximate minimum funding? Use other Federally funded programs at the university as a basis for estimation.

4. Is the new proposed safety program of the kind which the university might be motivated to match funds with?

5. Would the university consider establishment of fellowships, stipends or research assistantships from its own funds in addition to those which might be funded by the Federal agency?

IV. Discussion Points on Facilities

1. Does the university have land and facilities at present which it could commit to a Safety Education and Research Center?

2. If insufficient facilities exist, would the university build or procure additional facilities?

3. Is the university prepared to provide housing for special students undergoing short courses in highway safety?

4. Is there an expressed interest in committing existing facilities or building new facilities to house the proposed new safety program?

V. Discussion Points on Faculty

1. Are there a sufficient number of faculty in related disciplines, who are presently in residence, and who could provide their talents in this field?

2. A small resident faculty might become necessary at the Safety Center to conduct administrative and research functions. What would be their university status?

3. What assurances would the university require before commencing a program of recruitment for faculty if the current resources were not sufficient?

4. The present concept calls for faculty to be hired with full-fledged status and who will teach and conduct research on a part-time basis at a Safety Education and Research Center. How acceptable would this procedure be?

5. Has there been a faculty acceptance of teaching short non-degree courses in technical areas?

6. What has been the acceptance among the faculty for participating in inter-disciplinary programs of an applied nature?

VI. Discussion Points on Students

1. Has the university established a precedence for the recruitment of students in earlier programs which have been funded under Federal programs? How effective have these been?

2. What primary motivations have "worked" with students to gain their active involvement in such specialized programs?

3. Would there be support for establishing a recruitment program for students who would enter a course of education leading to the safety field?

4. How strong has been the motivation of students to participate in new Federally funded programs directed toward manpower development?

5. What levels of interest may be expected among graduate students in related disciplines toward participation in safety research, joint dissertations, etc.?

VII. Discussion Points on Curriculum

1. How strong is the interest to establish or expand an interdisciplinary curriculum related to highway safety?

2. Is the extension program capable of expansion to include courses on highway safety? How much interest is there in having this done?

3. Would credits from other schools on highway safety courses be accepted by the university?

4. Would courses in highway safety be accepted as part of its general curriculum?

5. Is there an acceptance of jointly sponsored advanced degree programs in which research theses and dissertations would be cosponsored by a Center for Education and Research on Safety and graduate students' home departments?

Appendix 5-5

TOPICS FOR CONFERENCE DISCUSSION
ON THE FEASIBILITY OF UNIVERSITY-BASED HIGHWAY SAFETY MANPOWER DEVELOPMENT AND RESEARCH CENTERS
(HSMD & R Centers)

I. General Program Topics

1. University experience with other Federally funded education and research programs - effects upon general educational mission.

2. Problems perceived in the build-up of an HSMDRC.

   a. Faculty

   b. Facilities

   c. Other critical areas

   d. Speed of build-up perceived for an HSMD&R Center from orientation received on such centers

3. Length of commitment desired from NHSB. 5 yrs? 10 yrs? Annual funding?

4. Optimal placement of an HSMDRC in the university. With what school? Under which Vice-President? Under what Dean?

5. Present plans of the university to develop programs of research and education in highway safety.

6. Previous experience (and problems if any) in coordinating programs with other institutions of higher education.

II. Coordination with Federal agencies underwriting educational programs

1. Federally funded programs which have been easily administered with respect to reporting procedures, justification for funding etc.

2. Review procedures applied to Federally funded programs; review procedures which university considers most effective.

III. Finances

1. Matching of university funds with Federally funded programs; On what percentage basis has it been done in the past?

2. Areas of university interest in justifying expenditures of Federal funds (construction grants; equipment grants; curricular support; research grants; scholarships; faculty salaries, etc.)

3. Funding levels perceived for a Highway Manpower Development and Research Center (HSMDRC) based upon information received on its mission, student load, facility requirements, faculty requirements.

4. University perception of highway safety manpower development program with respect to: establishing its own fellowships, research assistantships, matching of Federal funds.

IV. Facilities

1. University perception of the type of facility required to operate an HSMDRC to meet requirements for:

    a. Training of short-course students

    b. Classroom facilities and equipment

    c. Graduate education and research including research facilities

    d. Residence capability

2. Problems envisioned as arising in meeting facility requirements; when Federal aid may be required.

V. Faculty

1. The need to pool the talents of existing faculties for conduct of training education and research in disciplines related to highway safety.

2. University status of a small resident staff at a HSMDRC.

3. Problems in hiring new staff with full university status and with part-time responsibilities at the Center.

4. General faculty attitudes in:

   a. Teaching short non-degree courses in technical areas

   b. Participating in inter-disiplinary programs of an applied nature.

VI. Students

1. Problems, and earlier university experience, in recruiting students for other Federally funded programs.

2. Motivating students to become actively involved in specialized programs such as highway safety.

3. Attitudes to be expected among graduate students in related disciplines toward safety research, joint dissertations between the Center and home departments.

VII. Curriculum

1. Compatibility of new training programs in safety with existing non-resident and extension programs; problems perceived in implementing training components of the program through such existing structures.

2. Acceptability of courses on highway safety as part of general university curriculum; problems in accrediting such courses.

3. Acceptance of credits for courses on highway safety for students transferring into the university.

4. Establishment of jointly sponsored degree programs for graduate students including multi-disciplinary courses to be taught at the Center.